

4 COMMENTS AND RESPONSES ON THE DEIR

The written and oral comments received on the DEIR and the responses to significant environmental points raised in those comments are provided in this section. Each comment letter and the public hearing transcript are reproduced in their entirety and are followed by responses to comments raised in them. Each individual comment is assigned a number (e.g., 1-1) that corresponds with the response following the comment.



Arnold
Schwarzenegger
Governor

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit



Sean Walsh
Director

April 26, 2006

Kevin Riley
City of Santa Clara
1500 Warburton Avenue
Santa Clara, CA 95050



Subject: 90 North Winchester Development Project
SCH#: 2003072093

Dear Kevin Riley:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. The review period closed on April 24, 2006, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Terry Roberts
Director, State Clearinghouse

1-1

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report State Clearinghouse Data Base

SCH# 2003072093
Project Title 90 North Winchester Development Project
Lead Agency Santa Clara, City of

Type EIR Draft EIR

Description The 17-acre property has been designated surplus land by the State of California and the Department of General Services must make the property available for sale, lease, or exchange to other State agencies, and, if no State agency is in need of the land, to local governmental agencies and private developers. Approximately ten acres are proposed for a 2-plus story single-family residential development (up to 110 units) and approximately one acre is to be dedicated as a City park. A senior housing facility with up to 165 apartment units in 3- and 4-story structures is proposed for the remaining six acres.

Lead Agency Contact

Name	Kevin Riley	
Agency	City of Santa Clara	
Phone	408-615-2450	Fax
email		
Address	1500 Warburton Avenue	
City	Santa Clara	State CA Zip 95050

Project Location

County	Santa Clara
City	Santa Clara
Region	
Cross Streets	Dorich Street and Forest Ave. @ Winchester Boulevard
Parcel No.	303-17-048 and 049
Township	7S
Range	1W
Section	15
Base	

Proximity to:

Highways	280, 880
Airports	
Railways	
Waterways	
Schools	
Land Use	Vacant, Agricultural to Planned Development

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Cumulative Effects; Drainage/Absorption; Flood Plain/Flooding; Geologic/Seismic; Growth Inducing; Landuse; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Septic System; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wildlife

Reviewing Agencies Resources Agency; Department of Conservation; Department of Fish and Game, Region 3; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 4; Department of Housing and Community Development; Department of Health Services; Department of General Services; Regional Water Quality Control Board, Region 2; Department of Toxic Substances Control; Native American Heritage Commission

Date Received	03/09/2006	Start of Review	03/09/2006	End of Review	04/24/2006
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LETTER 1

Office of Planning and Research
State Clearinghouse
April 28, 2006

- 1-1** The commenter states that no comment letters on the DEIR were received from public agencies. No response is necessary, because no questions on issues regarding the analysis provided in the DEIR were raised.

From: "Raluca Nitescu" <Raluca.Nitescu@rda.sccgov.org>
To: "Virginia Lasky" <vlasky@dtsc.ca.gov>
Date: 4/3/06 7:40AM
Subject: Draft Environmental Impact Report, Santa Clara Gardens Development Project

Please find attached the comments for the subject project:

April 3, 2006

Ms. Virginia Lasky, Project Manager
Department of Toxic Substances Control
700 Heinz Avenue, Suite 200
Berkeley, CA 94710

Subject: Notice of Availability of a Draft Environmental
Report (DEIR) for the Santa Clara
Gardens Development Project at 90 Winchester in
the City of Santa Clara

Dear Ms. Lasky,

The March 8, 2006 Memo along with the attachment for the subject project
have been reviewed.

Our comment is:

1. The Traffic Analysis should include the intersections of San
Tomas Expressway with Saratoga, Pruneridge, Stevens Creek and Homestead
Roads.

2-1

Thank you for the opportunity to review and comment on this application.

If you have any questions, please call me at 408-573-2464.

Sincerely

Raluca Nitescu
Project Engineer

Cc: Kevin Riley, AICP, Director of Planning and Inspection, City of Santa Clara

Gloria Sciara, AICP Project Manager, City of Santa Clara
MA, AP, SM, WRL, File

THIS EMAIL AND ANY ATTACHMENTS MAY BE
PLACED IN A FILE OPEN TO PUBLIC REVIEW

Raluca Nitescu, PE
Associate Civil Engineer
Land Development and Permits
Roads and Airports Department
County of Santa Clara
ph. (408)573-2464
fax (408)441-0275

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CC: "Gloria Sciara" <gsciara@ci.santa-clara.ca.us>

LETTER 2

Land Development and Permits Roads and Airports Department

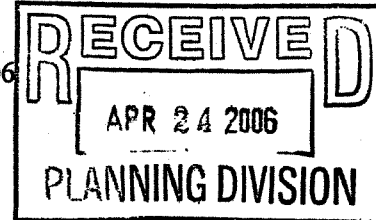
Raluca Nitescu

Project Engineer

April 3, 2006

- 2-1** The commenter states that the traffic analysis should include the intersections of San Tomas Expressway with Saratoga Avenue, Pruneridge Avenue, Stevens Creek Boulevard, and Homestead Road. The Recirculated DEIR included a revised traffic analysis. The recirculated transportation section (published July 2006) did not analyze the intersections of San Tomas Expressway with Saratoga Avenue or Homestead Road, because the number of trips generated by the project at this intersection did not exceed the 10 trips/lane in the peak hour, which is the guideline that the Valley Transportation Authority (VTA) recommends. The recirculated transportation section did include the Pruneridge Avenue and Stevens Creek Boulevard intersections. Please refer to Section 4.10, "Transportation and Circulation," of the Recirculated DEIR and Master Response 3, Section 3.3.2, "Evaluation of Additional Intersections and Roadways."

April 21, 2006



Gloria Sciara, Project Manager
City of Santa Clara, Planning Division
1500 Warburton Avenue
Santa Clara, CA 95050

**SUBJECT: DRAFT EIR FOR THE 90 N. WINCHESTER DEVELOPMENT PROJECT
(SANTA CLARA GARDENS)(File No. OA06-001)**

Dear Ms. Sciara:

The City of San Jose (CSJ) appreciates the opportunity to review and provide comments on the Draft Environmental Impact Report (EIR) prepared for the proposed Santa Clara Gardens project located at 90 N. Winchester Boulevard, adjacent to the CSJ. The project proposes to develop up to 110 single-family dwelling units, 165 senior housing units and one acre of park uses on the former 17-acre Bay Area Research Extension Center (BAREC) site.

The CSJ has reviewed the Draft EIR for the project, and has the following comments:

Traffic

Page 3-7, Section 3.5 Trustee and Responsible Agency Actions. Revise description of City of San Jose as follows:

The City of San Jose has jurisdiction over the public right-of-way along Forest Avenue and Winchester Blvd., and therefore, the project sponsor must obtain an encroachment permit from the City of San Jose Department of Public Works to allow improvements in the public right-of-way along Forest Avenue and Winchester Blvd. for emergency vehicle and pedestrian access, and any other traffic improvements in the City of San Jose jurisdiction required for the project, to the satisfaction of the Director of Public Works.

3-1

Page 4-112, Impact 4.10-9 Neighborhood Impacts, Mitigation for Impact 4.10-3.

The City of San Jose agrees with the EIR statement that a significant safety impact will occur with the addition of the project roadway as a new leg to the existing offset intersection, under City of San Jose jurisdiction, at Forest Ave. and Winchester Blvd. To address the impact, the EIR presents two options, both of which present concerns.

3-2

Option 1) The access configuration Exhibit 4-11a labeled "New site driveway with existing access" would not be acceptable because of potential operational and safety conflicts with the existing Forest Ave. neighborhood's signalized access west of Winchester Blvd.

Option 2) Furthermore, the solution proposed in the report, illustrated in Exhibit 4-11a labeled "New site driveway with modified Forest Ave. access" which includes removal of the signalized access to the existing Forest Ave. neighborhood west of Winchester Blvd, appears acceptable from an engineering perspective, but causes neighborhood impact or livability impacts to the existing Forest Ave. neighborhood which may cause the City of San Jose to ultimately reject the proposed improvement.

3-2
Cont'd

Therefore, the City of San Jose is not prepared to commit to approving the recommended new site driveway with modified Forest Avenue access without input from the affected San Jose residents westerly of Winchester Blvd. who would lose the signalized access and concurrence from the San Jose City Council District 6 Office, which represents those residents. The proposed signal modification appears to primarily benefit the Santa Clara Gardens Development Project in the City of Santa Clara at the expense of City of San Jose residents' existing access to Winchester Blvd. at Forest Ave. The report should analyze other design options, should the affected San Jose neighborhood and City Council District 6 Office not concur with the modification, such as construction of a right-turn in/out only driveway or relocating the main project driveway outside of the operations of the current offset Forest Ave./Winchester Blvd intersection.

3-3

The EIR should also disclose that the project's proposed park will itself attract some additional trips from outside the immediate neighborhood which will move through the Forest Ave. neighborhood west of Winchester Ave.

3-4

Hazardous Materials

Pages 4-54 to 4-67 – Hazards and Hazardous Materials.

The Draft EIR indicates that a Removal Action Workplan (RAW) has been prepared which addresses the removal of soils containing dieldrin and arsenic contaminants. The emphasis of the RAW appears to be primarily on soil removal construction worker safety. Potential impacts on area residents from contaminated soil removal activities should also be addressed through the preparation of a Community Health and Safety Plan (CHSP). The CHSP should, among other things, address an emergency response plan in the event of a truck accident or spill and identify a contact person and the notification process for community awareness.

3-5

Gloria Sciara

RE: CSJ COMMENTS ON DRAFT EIR FOR SANTA CLARA GARDENS PROJECT (File No. OA06-001)

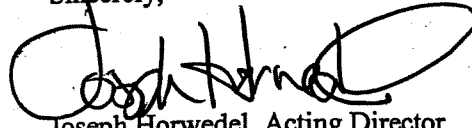
April 21, 2006

Page 3 of 3

Thank you for the opportunity to comment on the Draft EIR for this project. The CSJ looks forward to reviewing the Final EIR, as soon as it becomes available for public review. Please send a copy of the complete Final EIR, all future staff reports and notification of all public hearings for this project to my attention.

If you have specific questions concerning any of the transportation comments, please contact Karen Mack, City of San Jose Department of Public Works (408) 535-6816. For additional discussion on hazardous materials, please contact Napp Fukuda, City of San Jose Department of Environmental Services at (408) 975-2594. If you need to contact me, you may reach me directly at (408) 535-7815.

Sincerely,



Joseph Horwedel, Acting Director
Planning, Building and Code Enforcement

C: Karen Mack
Napp Fukuda
Janis Moore

OA06-001 90 CSC N. Winch DEIR Ltr.doc/JAM

LETTER 3

City of San Jose
Department of Planning, Building, and Code Enforcement
Joseph Horwedel
Acting Director
April 21, 2006

- 3-1 The commenter states that the project sponsor must obtain an encroachment permit from the City of San Jose Department of Public Works to allow improvements. The applicant would obtain all necessary permits from relevant agencies prior to construction of the project. The City of San Jose is identified as a responsible agency on page 3-7, Section 3.5, "Trustee and Responsible Agency Actions." The following changes have been made to page 3-7, bullet 1 of the DEIR. The revised text is presented below and in Chapter 5.0, "Revisions to the DEIR and Recirculated DEIR." This change does not alter the conclusions of the EIR.
- ▶ City of San Jose: The Applicant shall obtain an encroachment permit from the City of San Jose Public Works Department has authority to issue an encroachment permit that would to allow improvements in the public right-of-way along to Forest Avenue and Winchester Boulevard for emergency vehicle and pedestrian access, and any other traffic improvements in the City of San Jose jurisdiction required for the project, to the satisfaction of the Director of Public Works in the City of San Jose limits.
- 3-2 The commenter expresses concerns regarding the mitigation of proposed traffic impacts. The commenter states that the City of San Jose is not prepared to commit to approving this mitigation without input from the affected San Jose residents. Since the publication of the DEIR (March 2006), the project applicants have conducted several public outreach meetings including meetings focused on proposed traffic improvements. These meetings occurred on August 18, 2004, August 23, 2004, August 25, 2004, November 14, 2005, November 16, 2005, May 17, 2006, September 28, 2006, and October 10, 2006. The applicants will coordinate with the City of San Jose regarding the design of the proposed intersection. The City of San Jose will have final approval authority for the improvement.
- 3-3 The commenter states that the DEIR should analyze other design options for the intersection improvement. The DEIR and Recirculated DEIR presented two design options for the proposed modified intersection at Forest Avenue and Winchester Boulevard. The purpose of these design options was to present potential solutions that were feasible from a design and safety standpoint and that would achieve the primary purpose of reducing the project's potential safety impact (see Impact 4.10-9 of the Recirculated DEIR). The recommended design options also present the anticipated worst-case environmental conditions that could occur with implementation of mitigation. The DEIR and Recirculated DEIR complied with the requirements of State CEQA Guidelines Section 15126.4 by providing feasible mitigation and evaluating the environmental effects of that mitigation. The City of Santa Clara recognizes that the City of San Jose has final approval of the proposed mitigation at Forest Avenue and that modification to the design could occur during the design review phase subsequent to approval of the Santa Clara Gardens Development. Further, the City of San Jose, City of Santa Clara, and the project applicants may not be able to come to agreement regarding the proposed mitigation that should be implemented for this intersection. The DEIR and Recirculated DEIR concluded that this improvement would be under the City of San Jose's control and it is unknown whether this improvement would be implemented. Therefore, for purposes of

CEQA, the project's site access impacts would be significant and unavoidable. Consistent with the requirements of State CEQA Guidelines Sections 15091 and 15093, the City of Santa Clara would be required to make one of several findings for this impact and prepare a Statement of Overriding Considerations describing why, despite the project's significant and unavoidable impacts, the project should proceed.

3-4

The commenter states that the EIR should disclose additional vehicle trips from visitors to the project's proposed park. The DEIR evaluated the impacts that would occur from vehicle trips generated by the project, which includes the park. As described on page 4-105 of the DEIR, data collected from a nearby city park was used to estimate trips generated by the proposed park. The approach of using traffic data from an analogous nearby park to help predict traffic generated by the proposed park provides reasonable evidence to support the traffic analysis. The expected trips to the proposed park were combined with other project-related trips to evaluate the traffic impacts of the Proposed Project and were determined to be less than significant.

3-5

The commenter states that potential impacts on residents from contaminated soil should be addressed through the preparation of a Community Health and Safety Plan (CHSP). As described in Section 4.6, "Hazards and Hazardous Materials," of the DEIR, the project includes the preparation of a Removal Action Workplan (RAW) under the oversight of the California DTSC. This plan identifies the proposed actions for removal of contaminated soils from the Project Site and identifies specific health and safety measures that would be implemented to ensure public safety during remediation activities.

The potential impacts to human health during soil removal primarily occur from exposure to wind-borne dust and through accidents or spills at the Project Site. Sections 5.4 and 5.5 of the Draft Removal Action Workplan (RAW) describe dust control and air monitoring methods that are to be used to prevent nearby residents from being exposed to contaminants during soil removal. These methods include, but are not limited to, the following:

- ▶ Wet suppression of exposed soil areas (using water which leads to the formation of a surface crust to reduce the available reservoir of dust);
- ▶ No excavation work during high wind (25 mph or greater) conditions;
- ▶ Installation of wind fences and a dust screen around excavation areas;
- ▶ Covering of soil stockpiles (except when stockpile is being loaded); and
- ▶ Continuous dust monitoring along the property fence line to ensure that dust levels remain below action levels. If dust levels exceed action levels, additional dust control measures would be implemented and/or soil removal work stopped until dust levels are below action levels.

To prevent spills or the accidental release of contaminants during on-site remediation activities and during the transportation of contaminated soil off the Project Site, DGS and the project developers would implement a Transportation Management Plan (provided in Appendix A of the Draft RAW) that would require all waste haulers to develop a contingency plan for emergency situations, such as spills. This plan would identify the proposed transportation routes and the measures that would be implemented in the event of a spill or accident that would provide adequate protection to residents in compliance with DTSC's standard requirements for such plans.

A Community Health and Safety Plan (CHSP) is a plan required by the federal Environmental Protection Agency for the clean up of contaminated sites. As described above, DTSC is the state agency responsible for the overseeing the clean up of contaminated properties in California. DTSC required the preparation of a RAW. A RAW is similar to a CHSP in that it identifies the clean up levels for the site and the measures that would be implemented to remediate the site. Because a RAW has been prepared for the project site under the direction of DTSC, the preparation of a CHSP would not be required.

3-6

The commenter requests a copy of the FEIR when it becomes available. A copy of this Response to Comments document will be forwarded to the City of San Jose for at least 10-days review prior to the City of Santa Clara considering certification of the document, as required by Section 15088(b) of the State CEQA Guidelines.



GUADALUPE - COYOTE RESOURCE CONSERVATION DISTRICT

888 NORTH FIRST STREET RM. 204, SAN JOSE, CA 95112-6314
OFFICE (408) 288-5088 FAX (408) 983-8728 email: gcrd@pacbell.net

April 24, 2006

TO: Gloria Sciara, Project Manager
City of Santa Clara, Planning Division
1500 Civic Center Drive
Santa Clara, CA 95050

FAX: 247-9857

SANTA CLARA GARDENS DEVELOPMENT PROJECT DRAFT EIR

The Guadalupe Coyote Resource Conservation District has reviewed the Hydrology and Water Quality Section of the subject EIR and offers the following comments:

4.8 Hydrology and Water Quality

4.8.1 Environmental Setting

The DEIR states that the nearest body of water to the project is the Guadalupe River, three miles to the north. This is incorrect. The nearest body of water to the project site is San Tomas Aquino Creek, approx. one half mile to the west. The DEIR states that the proposed project is located in the West Valley Watershed. While this is the case today, this is only as a direct result of human modifications to our waterways and watersheds. Historically, San Tomas Aquino, Saratoga and Calabazas Creeks used to join the Guadalupe River, well upstream of Guadalupe Slough, so they were once part of the Guadalupe Watershed. All three creeks were straightened, armored, rerouted and isolated from the river in the 1900's and now empty directly into Guadalupe Slough, downstream of where the Guadalupe River used to join the slough. The Guadalupe River historically flowed primarily into Guadalupe Slough, with perhaps some connection to Alviso Slough during high flows but it was re-routed and now flows into Alviso Slough. Because of the modifications, San Tomas Aquino, Calabazas and Saratoga Creeks are now considered to be part of the West Valley Watershed. Near the proposed project site, San Tomas Aquino Creek flows north, not south as the DEIR states, where it empties into Guadalupe Slough and subsequently into South San Francisco Bay. The DEIR states that existing topography of the site allows excessive stormwater to flow to two drainage systems; Winchester Blvd. and Forest Ave. and both of these systems drain into the San Tomas Aquino Creek box culvert.

4-1

The DEIR states that the area where the 6 acre senior housing site would be located is estimated to generate 1.9 cfs of runoff during a 10-year storm event and the 11 acre single family site is estimated to currently generate a runoff of 12.8 cfs during a 10-year

4-2

storm event. Most of the proposed project site now consists of pervious surface, which can absorb runoff. Because new projects should not increase runoff it is important to obtain an accurate accounting of runoff produced by the present site. Therefore, runoff from the present site needs to be measured and not estimated. In addition, since the runoff from the project site flows directly into storm drains, which quickly empty into San Tomas Aquino Creek, it needs to address how much flow will be dumped into the creek during a 100-year storm event. For flood protection and flood insurance purposes, creek capacity capabilities to handle the 100-year storm event are required. Significantly increasing the flash discharge to creek can quickly overwhelm its ability to handle the increased flows and thus greatly increase the risk of flooding and flooding damage in the area.

4-2
Cont'd

The DEIR states the City of Santa Clara operates a storm drainage system that conveys stormwater to San Francisco Bay. This statement is misleading, if not totally incorrect. There are no known storm drains that empty into the bay, especially in the project area. The DEIR states that storm runoff from the proposed project site flows into storm sewers, which empty into San Tomas Aquino Creek. If storm sewers directly emptied into the bay most of our creeks and rivers would not be in the sorry state they are today. Most all storm drains have been unwisely and improperly routed to our creeks and rivers over the years severely degrading or destroying their proper functioning and beneficial uses and increasing potential flooding, especially in downstream reaches. This practice needs to be stopped and the current discharges reduced.

4-3

4.8.2 Environmental Impacts

4.8.1 Water Quality Impacts - The DEIR states that the proposed project would not create or contribute to soil or groundwater contamination and would reduce pollutant concentrations in the project site runoff to the maximum extent practical. This commitment is vague and thus unacceptable.

4-4

The DEIR states the project will increase the impervious surface area in the project site by more than 50%. Pollution from impervious surfaces will be quickly carried by runoff to the storm sewers and into the creek. While the DEIR lists a number of things that can be done to reduce contaminants as much as practical there is no commitment to do so. The EIR needs to specifically state what actions will be taken to reduce any pollution or contaminants to acceptable levels, and not just as much as practical. If they can't be reduced to acceptable levels then the project should not be permitted.

4-5

4.8.2 Storm Drainage Impacts - The DEIR states the proposed project will increase the volume of storm runoff compared to existing conditions. It states that the developers propose to construct a stormwater drainage system (i.e., drains and pipes) that would connect to the City's existing storm drain system. It estimates the runoff would increase to 22.2 cfs during a 10-year storm event. It further states that the existing storm sewer system may not have the capacity to handle the estimated increased flows, which is likely to result in local flooding and this would be a potentially significant impact. It states that if the City sewer can not accommodate the increased storm flows the project would

4-6

construct a new parallel sewer pipeline to San Tomas Aquino Creek to handle the increased discharge. This is totally unacceptable.

The connection of drains directly to the City, as proposed, would not allow for the treatment or removal of pollutants per the commitments stated in section 4.8-F. Therefore, conflicting information is being provided. What will really be done? The flash discharge of stormwater, a precious resource, will potentially cause creek degradation and increase flooding potential. This is not appropriate or acceptable. The EIR needs to address what provisions will be made on-site to treat and filter polluted stormwater and conserve it for future use.

4-6
Cont'd

The EIR must address the impacts of the increased discharge from the 10 and 100-year storm events will have on San Tomas Aquino Creek. While it is recognized that San Tomas Aquino Creek is currently a concrete channel in the vicinity of the project, it is an open channel, some sections being armored and some earthen just downstream between Monroe St. and Scott Blvd. The channel is a open earthen downstream of Scott Blvd. Thus, increased flash flows to the system could cause flooding and/or erosion, especially downstream and the EIR needs to address these potential impacts.

There is now a lot of effort underway to protect and restore or rehabilitate our degraded creeks and to restore water quality and lost beneficial uses and one of the actions necessary to realize creek rehabilitation is the reduction of flash runoff. Just because a creek is channelized and armored today does not mean there will never be any effort to rehabilitate it. Historic records show that Calabazas, Saratoga and San Tomas Creek once had small populations of anadromous fish so there is certainly reason to try to rehabilitate these streams in the future. New environmental and water quality laws and goals also mandate the improvement of beneficial uses. The first step in any effort to improve conditions is to prevent any further degradation.

4-7

We strongly believe the site would better be utilized in research for the public good in our area. Along with other research projects we believe a demonstration site should be established to show ways that rainwater could all be captured in our area and put to use rather than throwing it down storm sewers. That said, it is obvious there could be significant decreases of storm water flow to the creeks. The City of Los Angeles is benefiting by capturing rainwater which results in less water importation. Practical applications should be developed at that site for green uses favored by many.

4-8

Sincerely,



Larry Johanns, P.E.
President,
Guadalupe-Coyote Resource
Conservation District

LETTER 4

Guadalupe Coyote Resource Conservation District

Nancy Bernardi

Secretary

April 26, 2006

- 4-1** The commenter states that the nearest body of water to the Project Site is the San Tomas Aquino Creek and not the Guadalupe River, as stated in the EIR, and that the creek in this area flows north. A local history of watersheds and their alteration is also provided. Section 4.8.1, “Environmental Setting,” is hereby revised to identify San Tomas Aquino Creek as the nearest body of water in the project area and to clarify the direction of flow of the creek. The third paragraph of Section 4.8.1 is revised as follows:

“The nearest body of water is San Tomas Aquino Creek, which is located approximately one-half mile to the west of the Project Site and flows north into the Guadalupe River. The nearest body of water is the Guadalupe River is located approximately 3 miles north of the Project Site.”

This revision does not alter the environmental conclusions in the DEIR. As the comment acknowledges, the DEIR already recognizes the drainage of the Project Site into storm drains that lead to San Tomas Aquino Creek. The comment’s description of the development of historic drainage patterns is noted. The EIR focuses on drainage patterns at the site as they currently exist, not on drainage patterns as they may have existed at some point in the past. This approach is consistent with CEQA Guidelines Section 15125 and case law construing these sections. These authorities direct the lead agency to focus on the existing physical environment at the time the project is considered for approval.

- 4-2** The commenter states that current runoff for the sites proposed for housing should be measured not estimated. The DEIR uses detailed estimates of runoff volumes that are reliable because they are calculated using actual rainfall data for the project area and standard methodologies contained in the Santa Clara County Drainage Manual. This method, which is a standard engineering procedure approved by the City of Santa Clara, yields sufficiently accurate information for environmental review. A detailed Storm Drain Analysis and Storm Drainage Report analyzing the drainage and presenting calculations are included in Appendix G of the DEIR. No other data on runoff volumes are available.

The commenter expresses concern about the site’s contribution to downstream flooding, because the drainage would flow into the San Tomas Aquino Creek. Flooding impacts from a 10-year storm, and mitigation measures included in the project that would reduce the impacts to less-than-significant levels, are addressed in Section 4.8.2, “Storm Drainage Impacts.” Impact 4.8-2 recognizes a potentially significant impact related to downstream drainage capacity. Mitigation Measure 4.8-2 requires the preparation and implementation of a Comprehensive Stormwater Drainage Plan that includes onsite detention or other measure to reduce peak flows for a 10-year storm to below existing levels. The mitigation measure binds the City to a specific performance standard against which the drainage plan will be measured. The analysis indicates that this performance standard can be achieved. The plan must be approved by the City. Implementation of this measure will reduce the drainage and flooding effect to a less-than-significant level.

- 4-3** The commenter states that the City of Santa Clara does not operate a storm drainage system that drains into the San Francisco Bay. The commenter states that the routing of storm drainage into creeks and rivers causes significant damage to these areas. The DEIR's statement about how the project area drains to San Francisco Bay, when viewed in context of with the full discussion of existing conditions, is correct. In Section 4.8-1, the DEIR explains that the path stormwater takes from the site to the bay is to first enter storm drains, which lead to San Tomas Aquino Creek, which then flows into the Guadalupe River, and ultimately discharges into South San Francisco Bay. The comment regarding the City's practice of having stormwater from developments discharge to storm drains and then to local creeks is noted. This is not a CEQA issue; therefore, no further response can be provided.
- 4-4** The commenter states that the conclusion in the DEIR that the Proposed Project would not contribute to soil and/or groundwater contamination is vague and unacceptable. The conclusion cited by the commenter is supported by substantial analysis and discussion of potential sources of pollution and how they will be addressed by elements of the project description and regulatory requirements to maintain effects at less-than-significant levels (see discussion related to Impact 4.8-1 in the DEIR, pages 4-82 through 4-84). The project is required to comply with the provisions of the National Pollutant Discharge Elimination System Permit (NPDES permit) for the Santa Clara Valley Urban Runoff Pollution Prevention Program for the discharge of storm water to South San Francisco Bay and its tributaries. The Permit requires a level of implementation of best management practices (BMPs) by local governments that reflect the regulatory standard of "maximum extent practicable." The Permit states that this is done through the requirement to more effectively incorporate source control measures, site design principles, and structural stormwater treatment controls in new development projects in order to reduce water quality impacts of stormwater runoff for the life of these projects. The DEIR states that the City of Santa Clara reviews stormwater management for new development projects on a case-by-case basis to ensure compliance with appropriate regulatory requirements including compliance with the City's drainage standard. With this compliance, significant water quality impacts will be avoided.
- 4-5** The commenter states that DEIR must address what provisions will be made to reduce additional pollutants in stormwater created to acceptable levels. The DEIR describes in the discussion supporting Impact 4.8-1 that the project will be subject to conformance with the NPDES Permit, which requires the implementation of stormwater control measures to reduce pollutants discharged from the site to the maximum extent practicable. The potential stormwater controls that could be implemented with the project are also listed in this section. The section contains a reference to more specific details provided in a Stormwater Quality Control Plan (Appendix H), included in the DEIR. In conformance with NPDES Permit requirements, the project's proposed storm drain system would not be directly connected to existing storm drain lines surrounding the site without providing on-site treatment of stormwater. The proposed storm drain system will be designed to accomplish the required treatment by incorporating on-site stormwater quality controls, which will be numerically sized to treat the water quality volume, as specified in Provision C.3 of the NPDES Permit. All stormwater leaving the site and entering existing City Storm drain lines will have been treated in conformance with stated requirements. Compliance with these regulatory requirements would prevent significant water quality impacts from occurring as a result of project development.

- 4-6** The commenter expresses concerns about the adequacy of the proposed drainage system and states that the EIR must address the impacts of the increased discharge from the 10- and 100-year storm events on the San Tomas Aquino Creek. The project would comply with the City's drainage standards. In Mitigation Measure 4.8-2, the DEIR states that the project developers shall prepare and implement a Comprehensive Stormwater Drainage Plan that identifies proposed storm drain facilities to reduce project runoff flows from a 10-year storm to below existing site levels for any flows that discharge to the existing storm drain system in Winchester Boulevard. The Plan must also demonstrate that 10-year flows from the project do not exceed the capacity of existing storm drain lines in Forest Avenue. The proposed drainage system would be designed to accommodate stormwater flows from large storm events (e.g., 100-year storm events) consistent with the City's stormwater design standards. These mitigation measure provisions would reduce the peak flows about which the commenter is concerned to less-than-significant levels.
- 4-7** The commenter expresses hope that no further degradation to local creeks and streams will be caused by the Proposed Project, in part because there is future potential to restore the creeks of Santa Clara County. As described in Impact 4.8-1 of the DEIR, the project's water quality impacts to local creeks and water ways would be less than significant because project developers would implement measures as part of their National Pollutant Discharge Elimination System (NPDES) requirements to reduce pollutant concentrations in project site runoff.
- 4-8** The commenter states that the Project Site should be utilized for research concerning stormwater runoff and that reduction in stormwater flows from the site are possible. The alternatives analysis in an EIR is directed to focus on a range of reasonable alternatives that would reduce significant environmental effects, according to the State CEQA Guidelines Section 15126.6. Therefore, consistent with the requirements of the guidelines, the DEIR does not need to evaluate alternatives to investigate stormwater runoff options. All stormwater treatment will be addressed in compliance with the City's drainage standards.

April 19, 2006

City of Santa Clara
Department of Planning and Building
1500 Warburton Avenue
Santa Clara, CA 95050

Attention: Gloria Sciara

Subject: City File No. PLN2003-03744 / 90 North Winchester Development

Dear Ms. Sciara:

Santa Clara Valley Transportation Authority (VTA) staff have reviewed the Draft EIR for the project referenced above for a construction of up to 110 dwelling units and 165 senior housing units on 16 acres at 90 N. Winchester Boulevard, north of Dorich Street. We have the following comments.

Bus Service

VTA provides bus service along Winchester Boulevard adjacent to the proposed project. In order to provide convenient transit service, VTA recommends that the City condition the developer to relocate the existing bus stop (currently located just north of Dorich Street) to a location adjacent to this proposed project. The new location should be 100 feet south of the crosswalk in order to accommodate buses that arrive from the Valley Fair Transit Center by turning left onto Winchester Boulevard from Forest Avenue. The relocated bus stop should include the following:

- A minimum 22-foot curb lane or bus duckout (see VTA standards).
- A 10' X 55' PCC bus stop pavement pad (see VTA standards).
- A minimum 8-foot sidewalk adjacent to the bus stop (per ADA standards).
- Direct pedestrian access from the development to the bus stop.
- No trees or planters in the bus loading zone.

5-1

Transportation System Planning and Design

Intersection Analysis

In the Draft Environmental Impact Report (DEIR), Forest Avenue and Winchester Boulevard intersection is evaluated as one combined intersection whereas currently there are two separate intersections adjacent to each other as North Forest Avenue and South Forest Avenue on

5-2

City of Santa Clara
April 19, 2006
Page 2

Winchester Boulevard. Please provide documentation in the DEIR why the two separate intersections are being evaluated as a single intersection.

5-2
Cont'd

On-Site Planning and Design

Development Design

VTAs *Community Design & Transportation (CDT) Guidelines* should be used when designing this development. This document provides guidance on site planning, building design, street design, preferred pedestrian environment, intersection design and parking requirements. The *CDT Guidelines* are available upon request to any agency staff. For more information on *CDT Guidelines*, please call Chris Augenstein of the CMP at 408-321-5725.

5-3

Thank you for the opportunity to review this project. If you have any questions, please call me at (408) 321-5784.

Sincerely,

Roy Molseed
Senior Environmental Planner

RM:kh

cc: Samantha Swan, VTA

LETTER 5

City of Santa Clara Valley Transportation Authority

Roy Molseed

Senior Environmental Planner

April 19, 2006

- 5-1** The commenter requests that the existing bus stop located just north of Dorcich Street be relocated 100 feet south of the crosswalk. This is not a CEQA issue and does not address the analysis provided in the DEIR; therefore, no further response can be provided.
- 5-2** The commenter asks why the two adjacent but separate intersections at Forest Avenue and Winchester Boulevard (North Forest Avenue and South Forest Avenue on Winchester Boulevard) are being evaluated as a single intersection. The intersection of Winchester Boulevard and Forest Avenue was evaluated as one intersection because the traffic signal phasing for these legs of this intersection is operated by one signal controller. The traffic analysis focuses on levels of service at modeled intersections. Level of service, or LOS, is a measure of anticipated delays at that intersection. LOS is a function of the cycling the traffic signal controls. Because one traffic signal controller regulates these roadway intersections, for purposes of calculating LOS, they are treated as a single intersection
- 5-3** The commenter states that the Valley Transportation Authority's Community Design & Transportation (CDT) Guidelines should be used when designing transportation developments. This is not a CEQA issue and does not address the analysis provided in the DEIR; therefore, no further response can be provided.

**MINUTES OF THE REGULAR MEETING OF THE
PARKS AND RECREATION COMMISSION
April 18, 2006**

COMMISSIONERS PRESENT: Carole Cooper, Lio Francisco, Julie Frazier, Vonna Gissler, Steve Lee, Jerry Marsalli, Chuck Seymour

STAFF PRESENT: Larry Wolfe, Director of Parks and Recreation
Gloria Sciara, Planning Department

GUESTS: George W. Cleveland, Corinne Celio, Marilyn Dost, Anthony J. Piazza, Carol McCarthy, Shelley Berlincourt, Laura Callejon, Jackie Moore, Linda Perrine, Dan Potash, Kirk Vartan, Camaron Colson, Kathy Robinson, Cynthia James, Katia Kamangar, Kathryn Mathewson, Diane DiGuiseppe,, Angela D'Orfani, Julie Patel, SJMN

MATTERS FOR COUNCIL ACTION: None.

- I. CALL TO ORDER – The meeting was called to order by Chair Cooper.
- II. APPROVAL OF MINUTES OF March 21, 2006– Approved as written.
- III. SUMMARY OF CITY COUNCIL ACTIONS – The Commission reviewed City Council actions pertaining to Parks and Recreation.
- IV. CORRESPONDENCE/COMMUNICATION – The Commission received a list of Frequently Asked Questions on the BAREC site, a site plan of a proposed one acre city park on the BAREC site, a letter from Mr. Hickey requesting the City preserve the BAREC site as open space and information on Kids Day America.
- V. COMMISSIONER'S REPORT – Commissioner Lee complimented staff on the “Kidz Love Soccer Program” conducted at Live Oak Park and suggested a similar program for tennis.

Commissioner Francisco reported on the upcoming May 19, 2006 Street Dance, and the adult soccer tournament to be held at Wilcox School.

Commissioner Gissler reported on a visit to Florida parks, Great America, and former Ulistac Volunteer Kelly Crowley honored at A T& T Stadium for her Special Olympics accomplishments.

Commissioner Marsalli reported on the Veteran's Memorial Committee meeting , the Easter Sunrise Service at the Veterans Memorial, and the Easter Egg Hunt.

Commissioner Frazier also volunteered at the Easter Egg Hunt and participated in the golf program at the Santa Clara Golf and Tennis Club.

Commissioner Seymour visited the Soccer Park, Creek Trail, Agnew Park, BAREC site, and Carmichael Park.

Chair Cooper visited Ulistac Natural Area, the Creek Trail, attended the CPRS Conference, and reported on an upcoming Regional Conference to be held in Santa Clara in June, 2007.

VI. OLD BUSINESS

- A. Art and Wine Festival – Commissioner Gissler is working on a Procedural Manual for the Festival and will submit the manual at the May 16, 2006 meeting.
- B. Program Report - The Director reported on the April 22 Thamien Park Dedication, the April 28 Arbor Day Celebration, and the April 29 Fish Derby.
- C. Project Update – The Director reported on the various construction programs in the Parks and Recreation Department.

VII. NEW BUSINESS

- A. BAREC Property – The Director gave an overview of the BAREC Property proposal and the one acre city park proposed on the 17 acre site. The Commission discussed the proposed park master plan and the senior housing and residential elements of the park.

The following comments were submitted by the public:

- 1. Land has more value than seen by the City.
- 2. Proposed non-profit agricultural project.
- 3. Concerned about sewer capacity and traffic.
- 4. State needs to clean up site.
- 5. City could use property for agricultural revenue.
- 6. Property is not well known by the public.
- 7. Quality of life is at stake.
- 8. More open space is needed than the proposed one acre park.
- 9. Incorporate "Mission Theme" in project.
- 10. City of San Jose and UC Santa Cruz have offered to help the City of Santa Clara.
- 11. Non-profit group has offered to purchase property.
- 12. Preserve open space for children/future.
- 13. Water samples need to be taken.

The Commission discussed the approval process and tabled the discussion to the May 16, 2006 Parks and Recreation Commission meeting.

6-1

VIII. Public Presentations – None

- IX. Adjourned to the next regular scheduled meeting, May 16, 2006, at 7:00 p.m., in the City Manager Staff Conference Room.

Prepared by:

Larry Wolfe
Director of Parks and Recreation

Jerry Marsalli
Secretary

LETTER 6

City of Santa Clara
Parks and Recreation Commission
April 18, 2006

- 6-1** The comment summarizes the discussions occurring during a regular meeting of the City of Santa Clara Parks and Recreation Commission held on April 18, 2006. Comments submitted by the public addressed issues including: the value of the land, sewer capacity, remediation activities, and requests for additional open space within the City. The environmental impacts associated with implementation of the project were evaluated consistent with the requirements of CEQA in the full-scope DEIR. No specific comments or questions on the analysis presented in the DEIR were offered; therefore, no further response is provided.

CITY OF SANTA CLARA



HISTORICAL AND LANDMARKS COMMISSION
MEETING

April 6, 2006 - Thursday
City Council Chambers

*** MINUTES **

7:00 P.M.

ITEMS FOR COUNCIL ACTION

Agenda Item IX. A: PLN2006-05613 Commission recommendation to approve the Mills Act Contract for 1460 Santa Clara Street

Agenda Item X.C: Appropriation of funds (\$725) for Jamison-Brown/Jack London Plaque. Funds are available in account # 001 1042 87710 XXXX 3059.

- I. Call to Order
Chairperson Richards called the meeting to order at 7:05 p.m.
- II. Roll Call
Members Present: Chairperson Ed Richards, Commissioners Boynton, Marinshaw, McKee, Petersen, Booker and Wilson
Architectural Advisor: Volunteer Architectural Advisor Craig Mineweaser, AIA was not present but sent written comments
Staff Present: Gloria Sciara, Interim Manager of Development Review, Judith Silva, Associate Planner/Staff Liaison to HLC and Willene Howard, Code Enforcement Technician/Recording Secretary
- III. Request for withdrawals and continuances without a hearing
None
- IV. Approval of Minutes
A. HLC Meeting Minutes of February 2, 2006
Note: HLC Meeting of March 2, 2006 was cancelled.

Commissioner Boynton noted that his name was misspelled in the minutes of February 2, 2006.

Motion: It was moved by Commissioner McKee, seconded by Commissioner Petersen and unanimously carried that the Historical and Landmarks Commission note and file the minutes of February 2, 2006 as corrected.

- V. Items on this Agenda Requiring Council Action
The following items may be heard by the City Council upon a recommendation by the Historical and Landmarks Commission:
- A. Request for Mills Act Contract – 1460 Santa Clara Street (PLN2006-05613)
 - B. Review and Comments for Draft EIR (Environmental Impact Report) for BAREC Property – 90 North Winchester Boulevard (Memo and report sent 3/8/06)
Commissioner comments will be forwarded to Planning Commission and then to City Council at a later date.
 - C. Appropriation of funds for Jamison-Brown/Jack London Plaque

- VI. Council and Planning Commission Actions Pertaining to the Historical and Landmarks Commission (Discussion as Needed)

Ms. Silva reviewed items of interest to the Commission related to City Council meetings in February and March 2006.

- VII. Correspondence/Announcements
A. General Correspondence Distributed in Commission Packet

- VIII. Public Presentations
There were no public presentations

- IX. New Business
A. Request for Mills Act Contract – 1460 Santa Clara Street (PLN2006-05613) and Review of Bronze Plaque Wording for 1460 Santa Clara Street

Ms. Silva noted that the property owner was requesting a Mills Act property and briefly reviewed the 10-year plan for renovations.

Motion: It was moved by Commission McKee, seconded by Commissioner Marinshaw and unanimously carried to recommend City Council approval of a Mills Act Contract for the property located at 1460 Santa Clara Street.

Ms. Silva stated that the draft wording for the bronze plaque had been reviewed with the property owner, with contributions also from Mary Hanel, City Librarian. Ms. Silva noted that the last line of information was added and probably should be clarified by the Commission/owner.

The Commission discussed the wording and agreed it was too long and wanted staff to revise it and bring the matter back to the Commission.

Motion: It was moved by Commissioner Wilson, seconded by Commissioner Booker and unanimously carried to refer back to staff for rewording of the plaque.

- D. Request for Oval Plaque – 823 Monroe Street (existing significant property with Mills Act Contract).

Ms. Silva noted that the applicant was requesting an oval plaque for their historic property at 823 Monroe Street.

Motion: It was moved by Commissioner Wilson, seconded by Commissioner McKee and unanimously carried to provide the property owners' with an oval plaque for their property at 823 Monroe Street.

E. Architectural Review of 1st and 2nd Story Additions – 722 Park Court (PLN2006-05633)

Written comments from Volunteer Architectural Advisor, Craig Mineweaser, AIA were reviewed. Mr. Mineweaser commented that he concurs with the staff report that the project was too massive and too large of scale for Park Court subdivision. He recommended that the second floor walls should be reduced in height from 8 feet to 5 feet, reduce the size of the second floor addition from 3-bedroom/2 bath floor plan to a 1-bedroom/1 bath layout so that the 2nd floor addition does not overwhelm the addition. Other recommendations include using Craftsman Bungalow style dormers be used for the addition, to be in keeping with the rest of the house, and that using craftsman style windows.

Ms. Silva then reviewed staff report noting staff felt the addition was out massive for the Park Court Subdivision and surrounding neighborhood of small bungalows. She noted staff had met with the applicant/owner who to try to scale back the proposal prior to bringing the item to the Commission.

The property owner was present and addressed the HLC. Mr. Gold stated the lot was closer to 2,500 square feet, there was no garage, and it was 50 foot deep. He stated he was going to use wood paneling and not stucco on the garage. He provided pictures of homes he thought were similar to what he was proposing. He said he needed to enlarge the house because of the size of the family and did not believe that it was not appropriate in this neighborhood.

Ms. Janet Rindfleisch, neighbor, stated her concerns about the looming presence of the large second story addition so close to the property line, including impacts to privacy and the loss of sunlight on her property with windows facing her property. She suggested a much smaller addition with more setback or a one-story addition to preserve her sunlight and protect her privacy.

The Commission discussed the project. It was agreed that this project was too large for this neighborhood. Commissioner Peterson asked if the applicant was willing to incorporate the recommendations of Mr. Mineweaser, the applicant was not supportive of the reduced square footage citing his family's needs for square footage.

Commissioner Booker commented she felt the structure was much too large for small quaint homes that make up the Park Court Subdivision.

Motion: It was moved by Commissioner McKee, seconded by Commissioner Petersen and unanimously carried to continue this item for redesign.

F. Request for New Two-Story Single Family Residence– 940 Civic Center Drive (PLN 2006-05596)

Commissioner McKee abstained from this item because the project site is within 500 feet of his home.

Ms. Silva reviewed the staff report, while noting the Commission's comments would be reviewed by Planning Commission on April 12, 2006 in regards to the variance application associated with the project.

The property owner was present and addressed the HLC. Mr. Alvarez stated he had worked with staff at length on redesigning this project and believes it is a good project.

The Commission briefly discussed the project and agreed it was a viable project.

Motion: It was moved by Commissioner Wilson, seconded by Commissioner Boynton and unanimously carried (Commissioner McKee abstained) to recommend approval of the proposed new two story single family residence at 940 Civic Center Drive, subject to the conditions recommended in the staff report.

G. Request to amend PD Zoning to Construct Four Two-bedroom Residences – 1468 Lafayette Street (PLN2006-05658)

Commissioner Petersen excused himself from this item because the project site is within 500 feet of his home.

Ms. Silva reviewed the staff report while noting the Commission's comments would be forwarded to the Planning Commission for the April 12, 2006. She noted that this was a request to amend the formerly approved Planned Development. She noted the project included 4 duet homes with two units per building on an existing lot, and that an amendment to the previously approved Planned Development was being sought, as well as a variance to the General Plan Density and to the Density Bonus approval. She indicated that staff is not supportive of the proposal as no below market rate unit is being offered. She noted the property abuts single family residential.

The property owner was present and addressed the HLC. Mr. Sal Caruso stated this project was similar to the previously approved project except for changes to building B. He stated building A was unchanged. He noted that the change would add 2 tandem parking spaces, which would be more parking spaces than the previously approved project. He also noted the only property that would be affected by this change would be his adjacent commercial property.

Ms. Sciara explained to the Commission that this change requests to increase to the General Plan density. It was a matter of Land Use Policy with regard to Density Bonus. Instead of providing a below market rate unit as required, the applicant is requesting to be allowed 4 market rate units and that does not coincide with the intent of the Ordinance. Mr. Caruso stated there was a variance request to the General Plan to accommodate this.

The Commission discussed the project and staff's alternatives to the project. The Commission agreed the project should be reduced in scale and density.

Motion: It was moved by Commissioner Boynton, seconded by Commissioner McKee and unanimously carried (Commissioner Petersen abstained) to recommend Planning Commission denial of the proposed amendment to the PD zoning to construct four two-bedroom residences at 1468 Lafayette Street and that the applicant follow the current General Plan policies.

H. Review and Comments for Draft EIR (Environmental Impact Report) for BAREC Property – 90 North Winchester Boulevard (Memo and report sent 3/8/06)

Ms. Sciara noted that the environmental consultants, Mr. Brian Ludwig and Ms. Amanda Olekszulín from EDAW, were present for discussion. She noted the Historical and Landmarks Commission was being requested to review the Cultural Resources section of the DEIR. Ms. Sciara noted that the DEIR had been prepared in compliance with the California Environmental Quality Act (CEQA) of 1970 and amended through the Public Resources Code, while explaining that this document is a full disclosure, public information document where significant environmental impacts of the proposed project are evaluated, and feasible measures to mitigate significant environmental effects are identified and alternatives to the project are site that can reduce or avoid significant environmental effects.

She noted that the project site is located at 90 North Winchester Boulevard. The project involves an affordable senior housing project (Santa Clara Methodist Foundation and Charities Housing) who would develop up to 165 units on approximately 6 acres and the market-rate housing developer (Summerhill Homes) would develop up to 110 single family homes on smaller size lots on approximately 10 acres with the inclusion of a one acre public park. Actions to be considered include approval of a General Plan Amendment, a Density Bonus, Tentative Parcel Map and Tentative Subdivision Map to subdivide the property.

Ms. Sciara noted the public notices had been mailed out to interested parties, property owners within 1,000 feet of the project, and to various State and Local agencies per State law. She noted the public comment period ended April 24, 2006. She further noted that over 1000 mailing notices have been sent to various agencies, interested parties and property owners in the vicinity of the project site.

Ms. Sciara listed the significant and unavoidable adverse Impacts identified in the Draft EIR which included: Conversion of Farmland to Non-agricultural Use; Vehicular Site Access and On-site Circulation Impacts; Cumulative Impacts to Construction-Related Air Quality; Cumulative Roadway Intersection Impacts, and Cumulative Farmland Impacts.

In regards to the Cultural Resources Impacts Evaluation, she noted that the reports found that ten buildings at 68 and 90 North Winchester Boulevard evaluated in this report do not appear to be eligible for the California Register of Historical Resources. The report found that mitigation measures are not required under California Environmental Quality Act (CEQA) as no qualified historic resources exist. A condition of approval was recommended to prepare historic documentation of the existing buildings including photographs taken according to the archival standards of the Historic American Building Survey (HABS) with copies of documentation donated to the local history collection at the City of Santa Clara Main Library, and other standard repositories of information.

Ms. Sciara reviewed the comments received from Craig Mineweaser, A.I.A. Volunteer Architectural Advisor to the Historical & Landmarks Commission. Mr. Mineweaser's written comments state "how the landscape of the site, the historical buildings on the site, and their relationship to this landscape have been demolished, altered and/or changed repeatedly to the point that in all three cases their historical integrity is gone." He further pointed out that, the other buildings on site are newer than 50 years, but are not historically significant either architecturally, or in their setting and their associations with the site and its activities. Mr. Mineweaser agreed with the findings of the DEIR and the recommended condition of approval to prepare a HABS report.

Ms. Sciara asked the Historical and Landmarks Commission to make comments to City Council regarding the adequacy of the Cultural Resources section of the DEIR and recommended mitigation measures, and provide any comments on the project if desired.

Ms. Olekszulyn stated the development of this DEIR has been ongoing for some time. She indicated their methodology and consultation with the State Office of Historic Preservation on the cultural resources. There had been several site visits, extensive research, and ongoing communication.

The Public hearing was opened.

Mr. James Rowen noted the report done by Craig Mineweaser, the Commission's Architectural Advisor. He also noted there has been significant change in the use of the buildings and that little remained of the historic uses.

7-1

Ms. Kathryn Mathewson handed out information to the Commission. She stated there had been two previous EIRs, one done in October 2002, which conflicts with this current DEIR and should be reviewed by the City. She said the site should be preserved and saved as open space. She reiterated Lorie Garcia's comments that the "site is so significant, it should be on the National Register."

7-2

Ms. CJ Hass asked the Commission if they had read the entire over 1,000 pages of the report and if they hadn't she didn't believe they were equipped to comment on it. She noted this was the last piece of agricultural land left in the city, and should be placed on the National Register. She also stated that inadequate research was done on the historic uses of the property.

7-3

7-4

7-5

Ms. Lilyann Brannon stated her concerns that this generation was not the last one in the Valley and that it should leave something to the oncoming generations. She believes the site and its buildings to be very historic and should be preserved as open space. She also noted the historical importance of the site, locally and nationally.

7-6

Mr. Kirk Vartan stated the land was not just farmland but it was prime farmland and should be preserved. He also stated that it was a very important and historical place and should not be torn down. He noted that the SaveBAREC group is proposing an agricultural use that would preserve important prime farmland for future generations.

7-7

7-8

7-9

The Public hearing was closed, and then reopened to allow a final speaker.

Jackie Moore, Catherine Street asked that the buildings on the site be preserved, and noted the historical and agricultural importance of the property and it should remain open space.

7-10

Commission Discussion then began.

Commissioner Booker stated that the Commission had wanted to do a site visit but never was able to. Ms. Sciara replied that the site is controlled by the State and the State had concern of the safety of allowing the public to visit the site.

Commissioner Petersen acknowledged development of the property was likely. He also noted that preserving open space was preferable, but if the development moves forward, he strongly recommends the construction of an information kiosk, similar that was built at the Sun Campus with interpretive displays chronicling the varied

history of the property. He noted the kiosk could be placed in the future park. Commissioners Marinshaw, McKee, Boynton, and Chair Richards concurred.

Commissioner McKee noted the toxic materials in the soil and asked if this would be cleaned up. Ms. Olekszulyn noted that the clean up is required, and will be taken care of prior to any development taking place on the property. She noted that the State Department of Toxic Substance Control is handling the property remediation.

Commissioner Wilson stated land is important to future generations for educational purposes and wished to see it remain as an agricultural site for future generations. Commissioner Booker agreed.

Commissioner Booker stated the Commission could decide to deem the structures historically significant under CEQA.

Commissioner Boynton noted the Commission's comments were to focus on the adequacy of the Cultural Resources section of the DEIR and stated that the DEIR provided a thorough analysis of the site. He recommended the Commission approve this section of the DEIR. Commissioner Marinshaw agreed with Commissioner Boynton's comments.

Commissioner Boynton made a motion to approve the Cultural Section of the DEIR, and Commissioner Marinshaw seconded the motion. There was a 2-5 vote against the motion. The motion failed.

Chair Richards then indicated to staff, that it was unlikely the Commission would be able to reach a consensus on a recommendation. He noted, that he preferred to see open space, but felt the possibility was not likely.

No other motions were made.

Comments then summarized included issues related to the proposed project, such as preserving open space/agricultural uses on site, a condition of approval for an interpretive center, if the project is approved. No additional comments were made regarding the adequacy of the DEIR as part of the public comment period of the DEIR, other than those previously mentioned.

Staff indicated that the Commission's comments would be forwarded to the Planning Commission and City Council for review when the DEIR and project applications are heard before each body.

X. Old Business, Referrals and Continued Items

A. Reappointment of Vice Chairperson

Motion: It was moved by Commissioner Wilson, seconded by Commissioner Booker and unanimously carried to appoint Commissioner McKee as Vice Chairperson.

B. Comments and Recommendations for Nostalgic/Retro Cactus Signs at the Western Motel – 2250 El Camino Real

Ms. Silva highlighted on a staff report prepared by the Commission.

Mr. Sal Caruso, applicant, stated that he would request the condition be modified. He stated there should be a timeline as to how long they will have to look for someone to take the sign and there should also be a limitation as to where they are required to deliver the sign.

The Commission discussed the item.

Motion: It was moved by Commissioner Booker, seconded by Commissioner Wilson and unanimously carried that the owner/applicant at 2250 El Camino Real develop a public outreach plan that incorporates local, and regional museums and preservation groups to offer the sign for donation and transfer. The applicant will only be required to provide the sign for 90 days after a list of potential relocation recipients have been provided to the Planning Department. The applicant is also required to ship or pay for shipping of the sign if the recipient is within 100 miles of the project site.

C. Discussion Regarding Jamison-Brown/Jack London Bronze Plaque – (Triton Museum Grounds)

Ms. Silva briefly gave an overview of the report that had been prepared for the Commission relating to information on the Jamison-Brown/ Jack London Bronze Plaque, which has been removed from the triton Museum Grounds.

The Commission discussed this item. The Commission considered having a new plaque placed on this site. There was some discussion as to what it would read. Such as Commissioner Wilson's suggestion of it beginning with "Legend has it..." Not all the Commission agreed with this but decided to refer it back to staff for rewording.

It was moved by Commissioner Boynton, seconded by Commissioner Wilson and unanimously carried to refer the rewording back to staff. It was also moved by Commissioner McKee, seconded by Commissioner Wilson to request City Council approval of up to \$725 for a new bronze plaque for the Jamison-Brown House on the Triton Grounds.

D. 31st Annual California Preservation Conference – April 20-22, 2006, Sacramento
The Commissioners are unable to attend

XI. Commissioner/Committee Reports

A. Santa Clara Arts and Historic Consortium (McKee)

[Fourth Monday of each month at 7:15 p.m. - Headen-Inman House]

Commissioner McKee stated there would be a celebration of the 1906 earthquake on April 23rd on the Agnew campus.

B. Historic Preservation Society of Santa Clara (Richards/Marinshaw alternate)

[Second Friday of each month at 10:00 a.m.- Harris Lass Preserve]

Next meeting Friday April 7, 2006.

C. Old Quad Residents Association (Richards/McKee alternate)

There was no meeting and no report.

D. Neighborhood University Relations (Petersen)

Commissioner Petersen noted that the NURC meetings had been reduced to one a year.

E. Architectural Committee (Petersen)

There was no report.

XII. Items Considered, Time Permitting

A. Commission Budget for 2005-06

Commissioner Petersen noted that the fiscal year was almost over and asked the Commission if there was anything they knew of that needed to be encumbered before the end of the year.

- XIII. Pending Agenda Items (notice of upcoming agenda items only- No discussion)
- A. Commemorative plaque for the Verein (this item has been forwarded to Santa Clara University). A second letter was sent December 8, 2005 to Joe Sugg and installation is expected Summer/Fall 2006.
 - B. Commissioner Training
 - a. Commissioners Marinshaw, Richards and Wilson – workshop in San Simeon March 20 and 21st, 2006 (Reservations and Registrations Completed)
Commissioners Marinshaw, Richards and Wilson discussed the training at the workshop. All expressed it was a great learning experience.
 - C. Further updates on Harris-Lass Preserve
Chairperson Richards stated Director of Parks and Recreation, Larry Wolfe, had discussed with him the possibility of his Department taking over the renting of the Harris-Lass for events and that he was supportive of taking over this function. His department handles renting of park space and a regular basis.
 - D. Further discussion of Maywood Mackay and FairmedeTracts in Santa Clara

XIV. Adjournment

The meeting was adjourned at 9:43pm until the next meeting on May 4, 2006.

Respectfully submitted:

Approved:

Willene J. Howard
Code Enforcement Technician/
Recording Secretary

Judith Silva
Staff Liaison to the Commission/Associate Planner

Approved:

Gloria Sciara, AICP
Interim Manager of Development Review/
Historic Resources Coordinator

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LETTER 7

City of Santa Clara
Historical and Landmarks Commission
April 6, 2006

7-1 The commenter noted the report produced by Craig Mineweaser and stated that, because of significant changes in the use of the buildings on the Project Site, little remained of the historic uses. The DEIR contains an evaluation of the site's cultural resources in compliance with CEQA in Section 4.11, "Cultural Resources." As described therein and further elaborated in Master Response 5, the conclusion of the EIR, after extensive research and review of evidence in the record, is that neither the structures on the Project Site nor the landscape qualify as historical resources under Section 15064.5 of the State CEQA Guidelines or are eligible for listing on the California Register of Historical Resources (CRHR) or the National Register of Historic Places (NRHP). Further, staff of the Office of Historic Preservation (OHP) concurred with findings presented in the DEIR (see Appendix B of this document). The commenter offers no evidence that the analysis presented in the DEIR is inadequate; therefore, no further response can be provided.

7-2 The commenter stated that the findings of the current DEIR conflicts with two previous EIRs conducted on the same site. To the City's knowledge, no previous EIR's have been prepared for the project. Without a citation to specific reports, it is unclear to what previous documentation the commenter is referring; therefore, no further response can be provided.

The commenter repeats comments made by Lori Garcia that the "site is so significant, it should be on the National Register." The project's impacts to historic resources were evaluated consistent with the requirements of CEQA in Section 4.11, "Cultural Resources," of the DEIR. As described therein and Master Response 5, the DEIR concluded that the project impacts to historic resources would be less-than-significant. Further, staff of the OHP concurred with findings presented in the DEIR (see Appendix B of this document). Because the commenter offers no evidence to support the finding that the Project Site is significant, no further response can be provided.

7-3 The commenter asked the commission if they had read the EIR. No response is necessary, because no questions or new information related to the environmental analysis were raised.

7-4 The commenter stated that the Project Site is the last piece of agricultural land left in the City and should be placed on the National Register. The project's impact to farmland resources were evaluated consistent with the requirements of CEQA in Section 4.1, "Land Use and Agricultural Resources." As described in the DEIR, the project's impacts to farmland resources were determined to be significant and unavoidable (page 4-9) and no feasible mitigation is available to reduce or eliminate the project's impact. The EIR acknowledges that the site represents one of the last remaining parcels of agricultural land in an area that is now almost entirely urbanized. Please refer to Master Response 7.

The DEIR contains an evaluation of the site's cultural resources in Section 4.11, "Cultural Resources." As described therein and further elaborated in Master Response 5, the conclusion of the EIR, after extensive research and review of evidence in the record, is that neither the structures on the Project Site nor the landscape qualify as historical resources under Section 15064.5 of the State CEQA Guidelines or are eligible for listing on the CRHR or the NRHP. Further, staff of the OHP concurred with findings presented in the DEIR (see Appendix B of

this document). Regarding disagreement with the conclusions of the DEIR, please refer to Master Response 2.

- 7-5** The commenter states that inadequate research was conducted into the historic uses of the property and states the site should be listed on the National Register. The DEIR contains an evaluation of the site's cultural resources consistent with the requirements of CEQA in Section 4.11, "Cultural Resources." In response to public comments received on the DEIR, additional research was conducted about a specific potential historic theme to which research at BAREC may have contributed, e.g., historic strawberry cultivation research. Further consultation with the State OHP has also occurred. The results of this additional research and consultation have been included in Master Response 5. The additional research has confirmed the environmental impact conclusions presented in the DEIR. As described therein and further elaborated in Master Response 5 (see Section 3.5.2, "CRHR and NRHP Eligibility Determination") the conclusion of the EIR, after extensive research and review of evidence in the record, is that neither the structures on the Project Site nor the landscape qualify as historical resources under Section 15064.5 of the State CEQA Guidelines or are eligible for listing on the CRHR and NRHP. Further, staff of the OHP concurred with findings presented in the DEIR (see Appendix B of this document). Regarding disagreements with the conclusions presented in the DEIR, please refer to Master Response 2.
- 7-6** The commenter states that the site is historic and should be preserved as open space and listed on the National Register. The DEIR contains an evaluation of the site's cultural resources consistent with the requirements of CEQA in Section 4.11, "Cultural Resources." As described therein and further elaborated in Master Response 5 (see Section 3.5.2, "CRHR and NRHP Eligibility Determination"), the conclusion of the EIR, after extensive research and review of evidence in the record, is that neither the structures on the Project Site nor the landscape qualify as historical resources under Section 15064.5 of the State CEQA Guidelines or are eligible for listing on the CRHR or the NRHP. Further, staff of the OHP concurred with findings presented in the DEIR (see Appendix B of this document). Regarding disagreements with the conclusions presented in the DEIR, please refer to Master Response 2.
- 7-7** The commenter states the Project Site is prime farmland and should be preserved. The comment that the site contains prime farmland is correct (See DEIR p. 4-7). The project's impact to farmland were evaluated consistent with the requirements of CEQA in Section 4.1, "Land Use and Agricultural Resources," of the DEIR. As described in the DEIR, the project's impacts to farmland resources were determined to be significant and unavoidable (page 4-9) and no feasible mitigation is available to reduce or eliminate the project's impact. Please response to comment 75-4 for additional discussion explaining why mitigation of this impact is considered infeasible. Please refer to Master Response 7.
- 7-8** The commenter states that the site is a historical place and should not be torn down. The DEIR contains an evaluation of the site's cultural resources consistent with the requirements of CEQA in Section 4.11, "Cultural Resources." As described therein and further elaborated in Master Response 5 (see Section 3.5.2, "CRHR and NRHP Eligibility Determination"), after extensive research and review of evidence in the record, is that neither the structures on the Project Site nor the landscape qualify as historical resources under Section 15064.5 of the State CEQA Guidelines or are eligible for listing on the CRHR or the NRHP. Further, staff of the OHP concurred with findings presented in the DEIR (see Appendix B of this document). Regarding disagreements with the conclusions presented in the DEIR, please refer to Master Response 2.

7-9

The commenter states that the SaveBAREC group is proposing an agricultural use that would preserve important prime farmland for future generations. The Draft EIR analyzes an alternative that calls for maintaining the agricultural use of the property. (See Draft EIR, Section 7.3, “No Project – Current Zoning.”) This alternative is consistent with the commenter’s proposal.

A number of commenters have proposed an alternative that is similar to the No Project – Current Zoning alternative identified in the Draft EIR. Among others, this alternative has been recommended by the ‘SaveBAREC’ organization. This alternative also calls for maintaining the agricultural use of the property. Although this alternative is generally consistent with the No Project – Current Zoning alternative, commenters have made various, specific suggestions regarding the nature of agricultural operations that might be established at the site. In order to provide complete information regarding the impacts of such an approach and in view of public interest in this alternative, such a variant to the No Project Alternative –Current Zoning has been added to the EIR so the City will have the benefit of this analysis. The analysis of this alternative appears at Master Response 6 – No Project Alternative – Current Zoning (Small-Scale Farming variation). Because this is a variant of the No Project – Current Zoning alternative, adding this discussion to the EIR does not require further recirculation of the Draft EIR, over and above the recirculation that has already occurred.

7-10

The commenter requested that the buildings on-site be preserved and commented on the historical and agricultural importance of the site. Please refer to response to comment 7-4.

April 28, 2006

VIA ELECTRONIC MAIL
Acknowledgement Of Receipt Requested

Kevin Riley, AICP
City of Santa Clara
1500 Warburton Avenue
Santa Clara, CA 95050
kriley@ci.santa-clara.ca.us

**Re: Comments on Draft EIR for Santa Clara Gardens
Development Project (SCH # 2003072093)**

Dear Mr. Riley,

The following comments are submitted to the City of Santa Clara ("City") on behalf of our client SaveBAREC.org, an unincorporated association of individuals, organizations, and businesses that live, work, and/or operate in Santa Clara and San Jose. We appreciate the City's agreement extending until today the period for us to submit these comments, as documented in the City's letter to us dated April 20, 2006.

We have reviewed the Draft EIR ("DEIR") for the Santa Clara Gardens Development Project ("Project"), together with various documents and materials relating to the Project obtained from the City's files. Assisting in our review were the following technical experts and consultants:

- Mehrdad Javaherian, PhD, PE, IAH, a principal in the engineering firm of ETIC Engineering, Inc.
- Eric Zickler, MS, an associate engineer at ETIC Engineering, Inc.
- Peter Christensen, an air quality specialist and modeling expert with 13 years of experience as an air quality analyst at the Sacramento County Air Quality Management District.

8-1

Each of these consultants has provided separate comments on corresponding sections of the DEIR. These expert comments, which are attached to this letter along with their respective *vitae*, should be responded to separately and individually.

I. INTRODUCTION & COMMENT OVERVIEW

“CEQA’s fundamental goal [is] fostering informed decision-making.” *Laurel Heights Improvement Association v. Regents of the University of California* (1988) 47 Cal.3d 376, 402. “An EIR is an ‘environmental “alarm bell” whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return.’” *Id.* at 392. “[T]he requirement of a detailed statement helps insure the integrity of the process of decision by precluding stubborn problems or serious criticism from being swept under the rug.” *Sutter Sensible Planning, Inc. v. Board of Supervisors* (1981) 122 Cal.App.3d 813, 820. It also ensures “the right of the public to be informed in such a way that it can intelligently weigh the environmental consequences of any contemplated action and have an appropriate voice in the formulation of any decision.” *Environmental Planning and Information Council v. County of El Dorado* (1982) 131 Cal.App.3d 350, 354.

In order to fulfill these functions, the EIR must “provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment; to list ways in which the significant effects of such a project might be minimized; and to indicate alternatives to such a project.” Pub. Resources Code § 21061. The analysis must be specific and detailed, and must also be supported by empirical or experimental data, scientific authorities or explanatory information, including comparative and quantitative evaluation. *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692; *Whitman v. Board of Supervisors* (1979) 88 Cal.App.3d 397; *People v. County of Kern* (1974) 39 Cal.App.3d 830.

This DEIR falls far short of satisfying these information disclosure requirements. As will be shown in these comments, and in those from our technical experts, the DEIR is fatally flawed in its identification, disclosure, evaluation, and mitigation of hazardous materials impacts, air quality impacts, and impacts on historical resources. The DEIR must therefore be substantially revised to cure these deficiencies, and must then be recirculated for additional public review and comment in accordance with the recirculation requirements of section 15088.5 of the CEQA Guidelines.

Each of the foregoing deficiencies is discussed below, as well as in the attached consultant comment letters.

II. INADEQUATE ANALYSIS AND MITIGATION OF HAZARDOUS MATERIALS IMPACTS

An EIR must evaluate as a potentially significant impact the risk to site users of contaminants and hazardous materials located on the site. CEQA Guidelines require that an EIR evaluate the impact of drawing users to a dangerous site:

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“The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected. For example, an EIR on a subdivision astride an active fault line should identify as a significant effect the seismic hazard to future occupants of the subdivision. The subdivision would have the effect of attracting people to the location and exposing them to the hazards found there.” CEQA Guidelines § 15126.2(a).

The CEQA Guidelines require agencies to consider as potentially significant impacts the exposure of the public to hazards from the transport, use, or disposal of hazardous materials, from reasonably foreseeable releases of hazardous materials into the environment, or from location on a contaminated site. CEQA Guidelines, Appendix G, p. 7. The Guidelines also treat as potentially significant impacts exposing the public to other hazards at a site, including floods, fires, seismic events, and noise. *Id.* at 6, 8, 9. Cases interpreting CEQA are correspondingly unequivocal: a CEQA document must fully disclose existing toxic chemical contamination at the project site so that the lead agency may propose methods to mitigate potential impacts. *McQueen v. Board of Directors* (1988) 202 Cal.App.3d 1136, 1145-1147, disapproved on other grounds by *Western States Petroleum Assn. v. Superior Court* (1995) 9 Cal.4th 559, 570, fn. 2, 576, fn. 6. As discussed below, the DEIR’s analysis and mitigation of hazardous materials impacts fails to satisfy these analytic standards and is therefore inadequate.

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A. Inadequate Investigation, Characterization, Disclosure, And Mitigation Of Hazardous Materials Impacts

As discussed in detail in ETIC’s comments, both the Remedial Action Workplan (“RAW”) and the Phase II Site Characterization Report (October 2003, ENVIRON) on which the RAW is based are seriously flawed. Among the defects are the following:

8-3

- Inadequate site characterization, including incomplete identification of chemicals of potential concern, sampling, and laboratory analysis;
- Inadequate assessment of human health risks associated with future development of the site, including failure to prepare an adequate Human Health Risk Assessment (“HHRA”);
- Inadequate and inconsistent approach to establishing cleanup criteria;
- Inadequate and inconsistent application of cleanup criteria in support of estimating the extent of soil (and contaminant) removal;
- Inadequate risk management measures to protect future site occupants from residual contamination.

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The BAREC site was used for over 70 years to test scores of agricultural pesticides. Nonetheless, laboratory analysis was conducted for only a handful of the 90 known pesticides applied to this site, and for none of the unknown pesticides applied for half a century before records were maintained. No empirical data in the form of broad spectrum analyses were developed to validate the decision not to test for other pesticides.

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Furthermore, the theoretical calculations purportedly supporting this decision were not actually presented in the Phase II document that was included in the DEIR and relied upon by the RAW. As ETIC comments, models for pesticide half-lives that may have been used as the basis of the missing calculations do not necessarily apply in real world conditions. Regardless, the absence of these calculations alone requires recirculation of the DEIR.

As ETIC further explains, soil sampling did not follow an approved protocol and was inadequate. The DTSC protocol used for sampling was clearly inapplicable. No other standard approaches to evaluating the adequacy of sampling data were implemented. Arbitrarily, no lab testing was conducted for any pesticides other than arsenic from samples collected below six inches below ground surface; no data was evaluated to validate this decision. Despite a high groundwater table and years of irrigation on fields covered with pesticides, no groundwater sampling was conducted. ETIC explained that pesticides were likely to have been pushed into the vadose zone by 70 years of irrigation. Thus, the site must be re-sampled to test for pesticides at depth and in groundwater.

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In addition, the Phase II relied on out-of-date closure documents with limited testing to conclude that there are no risks from underground storage tanks, a pesticide evaporation basin, and a leach field. These closure documents were not intended to support unrestricted residential usage. New studies must be conducted of these facilities before residential uses are sited on them.

Moreover, although preparation of a Human Health Risk Assessment (“HHRA”) is typical for any removal action, this RAW is *not* based on an HHRA. Thus, cleanup levels are not based on an assessment of the actual risk to future residents from residual contamination. Instead, the cleanup levels are based only on meeting background arsenic levels and the EPA’s Preliminary Remediation Guideline (“PRG”) for dieldrin. As discussed by ETIC and noted below, there is substantial evidence that the contamination at the site exceeds EPA’s acceptable cancer risk. There is *no* evidence that remediation using the arbitrarily adopted cleanup goals will result in an acceptable cancer risk because no HHRA was presented and no evaluation was made of the residual risk after cleanup.

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Even if background levels were an acceptable cleanup goal, here the arsenic background determination is not based on any credible source. Site background data is inconclusive because only one sample was available. The Scott background study is also inapplicable because of differences in lithography. The background data for a local shopping center is not documented, and the RAW unaccountably and arbitrarily adopts the *maximum* (20 mg/kg) rather than the average (12 mg/kg) arsenic level from that site as its cleanup standard. Finally, even the use of the 12 mg/kg average background level from the local shopping center would be unjustified because sampling data included in the Phase II report demonstrates a lower level for purported uncontaminated soils.

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Although a seriously flawed HHRA was prepared as part of a 2002 Phase II report for this site, DTSC apparently never reviewed this analysis – despite the Department of General Service’s obligation to submit this information to DTSC pursuant to the

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Voluntary Cleanup Plan. ETIC's review of this HHRA reveals that, even on its flawed assumptions, the actual cancer risk at this site exceeds the EPA's cancer risk goals. ETIC's recalculation of cancer risk, using the more appropriate maximum rather than average exposure point concentrations, reveals a cancer risk that actually *exceeds EPA's maximum acceptable limit of 1×10^{-4} and significantly exceeds the typical risk applied to residential sites*. Use of DTSC's current (2005) toxicity data for arsenic rather than the 2002 data used in the HHRA would increase this risk even more. The fact of this risk was not disclosed in the DEIR. And no analysis was presented to demonstrate that the proposed cleanup would result in acceptable cumulative risk from the residual pesticides at the site.

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The omission of this HHRA from the subsequent Phase II Site Characterization Reports that were submitted to DTSC and the Phase II report included in this DEIR is inexplicable. The omission is particularly inappropriate because the Hallenbeck/Allwest peer review of the site characterization report, which was cited by the DEIR, made explicit reference to this HHRA. Regardless, because the cleanup levels are not based on an adequate HHRA, there is simply no basis for concluding that the cumulative risks from the residual contamination from the dozens of pesticides used at this site will be acceptable.

Finally, even if the cleanup levels had been properly determined, the excavation plan is inadequate. The plan is based on meeting an average concentration of dieldrin in each field. The plan proposes to meet this average by excavating one hotspot and leaving in place concentrations of dieldrin that still exceed EPA's PRGs. But the future residents living, playing, and gardening on the dieldrin hotspots will not be subjected to "average" exposures. And for arsenic, the excavation plan provides no assurance that concentration levels will be uniformly reduced to meet even the incorrectly determined "background" level.

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B. Inadequate Evaluation Of Health Risk From Site Remediation Activities.

The DEIR acknowledges that site remediation activities contemplated in the RAW, namely excavation and removal of onsite contaminated soils and importation of clean fill material, will themselves result in potentially significant human health impacts. As the DEIR explains, "During these activities, disturbance of onsite soils could result in dust generation and release contaminants to the atmosphere and imported fill could contain contaminants (i.e., naturally occurring asbestos)." (DEIR at p. 4-30.) The DEIR then concludes that by complying with applicable BAAQMD requirements, including wet suppression, air monitoring and collection of meteorological data, and installation of a wind fence, "the potential for nearby residents to be exposed to contaminants present in onsite soils through the air pathway to less-than-significant levels." (*Id.* at p. 4-31.)

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The DEIR fails to quantify or meaningfully evaluate the potential human health impacts from airborne mobilization of soil contaminants, imported fill, and fugitive dust. Instead, it summarily concludes that implementation of a short list of BAAQMD

mitigation requirements will reduce any such impacts to less than significant levels. There is simply no analysis to support this perfunctory conclusion. Given the relatively high population density in the area immediately surrounding the site, including the presence of sensitive receptors, this analytic failure is especially grave.

The DEIR should be revised to include a quantitative analysis of the potential human health risks associated with the site remediation activities identified in the RAW, a meaningful disclosure of these risks, and documentation of the efficacy of the specified mitigation measures.

C. Failure To Consider Or Evaluate Environmentally Superior Alternative Site Remediation Methodologies And/Or Feasible Mitigation Measures

The Project Description in the DEIR properly identifies “site cleanup” as part of the proposed Project, and not as a separate, piecemealed action. (DEIR at p. 3-8.) However, the only remediation methodologies described and evaluated are those identified in the RAW, namely soil excavation, capping and replacement with imported fill. The DEIR fails to identify or evaluate feasible alternative site remediation approaches that would avoid or lessen the air quality and human health impacts associated with these remediation activities.

Under CEQA, an EIR must describe “a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.” (CEQA Guidelines, § 15126.6(a).) CEQA also requires that where several measures are available to mitigate an impact, each must be discussed and the basis for selecting a particular measure should be identified. CEQA Guidelines, § 15126.5(a)(1)(B). Whether viewed as part of the project description or as mitigation of hazardous materials impacts, the remediation measures identified and discussed in the DEIR are unduly limited to soil excavation, capping and institutional controls.

Several alternative remediation technologies exist, including bioremediation and phytoremediation, most if not all of which could successfully remediate the site at lower cost, and with far fewer secondary environmental impacts. Attached are materials describing generally how these technologies operate, and affirming their efficacy in similar contexts. According to USEPA and others, bioremediation technologies, including Xenorem™, Daramand®, and composting, have been shown to degrade dieldrin, DDT, and similar chemicals in contaminated soils to levels consistent with applicable remediation standards. Phytoremediation, particularly using ferns, in turn has been proven successful at removing arsenic and other metals from both soils and water.

Bioremediation is demonstrably feasible in this case. Also attached to this letter is a copy of a DTSC “Removal Action Certification” for the Borello Property, Morgan Hill, CA. This certification establishes that a 14-acre site used for agricultural purposes

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for over 40 years, contaminated with organochlorine pesticides such as dieldrin, was successfully remediated to residential standards¹ using bioremediation techniques. The process apparently took a little over one year, and no problems or cost overruns were reported. The DTSC Certification describes the process as follows:

“The project involved bioremediation of the dieldrin- and toxaphene-impacted soil to residential cleanup levels by amending the top 18-inches of soil at the Site. Based on results of an onsite treatability study, gene expression factor (GEF) and approximately three tons of cow manure, one ton of lime, 4,200 gallons of 34-0-0 fertilizer were mixed into the impacted soil to enhance bacterial growth. About one month after the soil amendments were added, the GEF was evenly spread over the entire property and mixed to a depth of approximately 18-inches. The property was irrigated at least four-time a week.” (Certification at p. 3.)

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Thus, neither wholesale soil excavation and removal, nor trucking in of imported fill material was necessary to remediate this similarly sized parcel, also in Santa Clara County, to residential cleanup standards. Air quality and human health impacts associated with soil excavation, removal, and fill were therefore avoided.

Since bioremediation and/or phytoremediation techniques would avoid most of the human health risks associated with excavation of contaminated soil and the import of fill material, there is no justification for the DEIR's failure to identify or evaluate these environmentally superior alternative approaches to site remediation and/or mitigation of hazardous materials impacts. The DEIR should be revised accordingly.

III. INADEQUATE ANALYSIS AND MITIGATION OF AIR QUALITY IMPACTS

A. Inadequate Analysis Of Construction-Related Air Quality Impacts

The DEIR acknowledges that pollutant emissions from construction equipment have the potential to create significant adverse air quality impacts during the site remediation and construction phases of the Project. (DEIR at p. 4-30.) The DEIR fails, however, to quantify these emissions or to meaningfully evaluate their potential impacts. Instead, the DEIR summarily concludes that: “[w]hile construction equipment and hauling of trucks emit CO and ozone precursors, these emissions are included in the emissions inventory that is the basis for regional air quality plans, and are not expected to impede attainment of ozone or maintenance of CO standards in the Bay Area.” (*Id.*) The DEIR therefore bases its finding that criteria air pollutant emissions from construction activities will be less than significant on nothing more than a bald, unsupported statement that the emissions are included in the BAAQMD emissions

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¹ The standard used for the Barelo site was 25 µg/kg, lower than the 30 µg/kg standard being applied to the BAREC site.

inventory. The apparent presumption is that emissions included in an emission inventory need not be analyzed or mitigated through CEQA.

The DEIR approaches construction-related emissions of PM₁₀ in a similar perfunctory fashion. The DEIR concludes that short-term air quality impacts from PM₁₀ emissions will be less than significant simply because the applicants “have agreed to implement all feasible BAAQMD-recommended control measures for construction-generated PM₁₀ emissions” (DEIR at p. 4-30.) The presumption here appears to be that if all BAAQMD-recommended mitigation measures are implemented, air quality impacts will *per se* be less than significant.

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These presumptions are not only illogical, they are clearly inconsistent with the requirements of CEQA. This inconsistency is highlighted by the fact that the DEIR actually quantified, evaluated, and partially mitigated impacts from operational emissions of criteria air pollutants, using an URBEMIS model run, even though these emissions are also included in the BAAQMD emission inventory.

As Mr. Christensen explains in his attached comments, the significance of construction exhaust emissions can be evaluated by estimating emissions with the URBEMIS 2002 v8.7 model, and comparing project emissions with BAAQMD operational emissions thresholds. Alternatively, project emissions can be compared to construction emission thresholds adopted by other California air districts. The URBEMIS model can estimate construction related emissions of reactive organic gases (ROG) and oxides of nitrogen (NOx), as well as exhaust particulate matter (PM) from diesel exhaust, fugitive PM, carbon monoxide, and other pollutants. The model provides individual construction phase results for demolition, grading, and building construction.

Mr. Christensen ran the URBEMIS model, using inputs provided in the DEIR itself. The analysis demonstrates that construction activities result in significant ROG and NOx impacts when compared with BAAQMD operational significance thresholds of 80 pounds per day (ppd) of ROG or NOx, and the South Coast Air Quality Management District construction thresholds of 100 ppd of NOx or 75 ppd of ROG. The significant impacts associated with construction of the Santa Clara Gardens Development Project include:

8-19

- Building demolition activities will generate 170 ppd of NOx;
- Site-grading will generate 281 ppd of NOx and 166 ppd of PM₁₀;
- Building construction during 2006 will generate 544 ppd of NOx;
- Building construction during 2007 will generate 520 ppd of NOx;
- Building construction during 2008 (including architectural coatings) will generate 660 ppd of ROG and 523 ppd of NOx.

These emissions substantially exceed applicable significance thresholds established by both BAAQMD and SCAQMD and are therefore significant unmitigated

impacts. Given the relatively high population density in the surrounding urban area,² including sensitive receptors, evaluation and mitigation of these impacts should be of paramount importance. The DEIR should be revised to disclose these significant construction impacts to the affected public.

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B. Failure To Require All Feasible Mitigation For Construction Impacts

Because construction vehicle exhaust impacts are significant, mitigation is required under CEQA. As Mr. Christensen discusses, several feasible mitigation measures exist to reduce emissions of ROG, NOx, and PM. Specifically, BAAQMD CEQA Guidelines recommend the following mitigation measures:³

- Conversion to cleaner engines.
- Use of cleaner (reduced sulfur) fuel.
- Regular maintenance – keep equipment well tuned.
- Reduce idling.
- Add-on control devices, e.g. particulate traps, catalytic oxidizers.
- Buffer zone between facility and sensitive receptors.

All of the foregoing measures are feasible for the Project. Specifically, “conversion to cleaner engines” could include the preferential use of newer construction equipment. Newer off-road diesel powered construction equipment which meets progressively stringent state standards can dramatically reduce exhaust emissions of NOx and PM.

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Cleaner fuels are also available. In addition to ultra low sulfur diesel which is currently available and soon to be mandated statewide, other reduced emission fuels are available. For example, emulsified diesel can be used in many types of construction equipment and will reduce emissions of NOx and PM.

In addition, as Mr. Christensen indicates, several diesel engine retrofit devices are now available to reduce emissions from diesel powered construction equipment. Retrofit options include:

- Diesel oxidation catalysts (DOC)
- Diesel particulate filter (DPF)
- Selective catalytic reduction (SCR)
- Lean NOx catalysts combined with DPF

² In the aerial photograph shown in Exhibit 3-3 of the DEIR, residential uses can be seen on three of the four sides of the project.

³ Bay Area Air Quality Management District (BAAQMD), BAAQMD CEQA Guidelines, December 1999, p. 60.

Diesel oxidation catalysts are available now from multiple manufacturers and provide emission reductions verified by the California Air Resources Board (CARB). Installation of DOCs on construction equipment can provide a 20 percent reduction in NOx emissions and 50 percent reduction in PM emissions.⁴ The combination of a lean NOx catalyst and diesel particulate filter provides the opportunity to reduce NOx emissions by 25 percent at PM emissions by at least 85 percent.⁵

As the DEIR states, BAAQMD recommends several mitigation measures specifically designed to reduce fugitive PM. As Mr. Christensen explains, these measures are generally recommended for small construction sites. Additional PM mitigation is recommended for sites larger than four acres, and “maximum” mitigation is “strongly recommended” for projects located near sensitive receptors (BAAQMD, p.15). Because sensitive receptors (residential units) are located adjacent to the project, all of the following mitigation must be included in the DEIR to be consistent with BAAQMD guidance:

- Water all active construction areas at least twice daily.
- Cover all trucks hauling soil, sand, and other loose materials *or* require all trucks to maintain at least two feet of freeboard.
- Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
- Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).
- Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.)
- Limit traffic speeds on unpaved roads to 15 mph.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.
- Install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site.
- Install wind breaks, or plant trees/vegetative wind breaks at windward side(s) of construction areas.
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph.
- Limit the area subject to excavation, grading and other construction activity at any one time.

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⁴ http://www.arb.ca.gov/diesel/verdev/level2/eo_de04007.pdf

⁵ <http://www.cleaire.com/site/products/index.html#>

The DEIR should be revised to include the construction exhaust and fugitive dust mitigation measures identified above and should be recirculated for public review.

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C. Inadequate Evaluation And Mitigation Of Health Risk From DPM Emissions

The DEIR acknowledges that that project construction and site remediation activities will generate emissions of diesel particulate matter (DPM) from on-site heavy duty equipment. (DEIR at p. 4-32.) The DEIR further acknowledges that the California Air Resources Board (CARB) has identified DPM as a toxic air contaminant (TAC).

TACs are a major public health issue in California. The combustion of diesel fuel in truck engines produces diesel exhaust that contains small particles and gases. These particles and gases contain some 40 compounds that are listed by the U.S. EPA as hazardous air pollutants and by CARB as toxic air contaminants. These gases and small particles are readily inhaled. The smallest particles, those less than about 2.5 microns in diameter, are trapped within the small airways and alveolar regions of the lung, where they can damage lung tissue, causing cancer and other disease conditions. Over 90% of the particles emitted from diesel engines are smaller than 2.5 microns.

Thus, diesel exhaust is a serious public health concern. Diesel exhaust has been linked to a range of serious health problems, including an increase in lung cancer; compromised pulmonary function after short-term exposure; adverse immunological responses involving allergic reactions; increased susceptibility to lung infection; inflammatory airway changes; decreased lung function, particularly in children and individuals with asthma; decreased resistance to infection; increased chronic inflammation; and premature death.

8-21

Potential health risks from TAC emissions prompted CARB to develop the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (RRP) in October 2000. The RRP found that near-source exposures to diesel PM can result in elevated exposures to sensitive receptors, resulting in the potential for up to 1,500 cancer cases per million.⁶ Similarly, the BAAQMD CEQA guidelines stress the need to meaningfully evaluate and mitigate impacts from diesel exhaust, particularly when emissions will occur near sensitive receptors.⁷ Meanwhile, the U.S. EPA recently completed a comprehensive review on the health effects of diesel exhaust and concluded that "long-term (i.e., chronic) inhalation exposure is likely to pose a lung cancer hazard to humans, as well as damage the lung in other ways depending on exposure. Short-term (i.e., acute) exposures can cause irritation and inflammatory symptoms of a transient

⁶ California Air Resources Board, Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, October 2000, p. 1.

⁷ BAAQMD, BAAQMD CEQA Guidelines, p. 47.

nature...”⁸ Elsewhere, this report concludes that diesel exhaust causes allergenic inflammatory disorders of the airways, increased acute sensory and respiratory symptoms (cough, phlegm, chest tightness, wheezing).

Individuals living along truck and/or construction vehicle transportation routes will be exposed to diesel exhaust and its associated health risks. Individuals living in the homes fronting the construction site will be exposed to these same impacts as well as additional significant health impacts associated with operation of diesel-powered construction equipment.

Despite this, the DEIR wholly fails to quantify, evaluate, or mitigate the potential human health impacts from these emissions. Instead, the DEIR summarily concludes that TAC impacts are less than significant (Impact 4.3-4). This conclusion is based not on an objective analysis, but on assumptions that construction is temporary and that PM has “dispersive properties.” This perfunctory approach is inconsistent with the City’s duty under CEQA to undertake a good faith effort to investigate, identify, disclose, and mitigate such impacts. See CEQA Guidelines, § 15126.2.

As Mr. Christensen explains, the duration of exposure and dispersion of the particulates are fundamental components of a concentration analysis and health risk assessment. Therefore, the DEIR should be revised to include a particulate matter concentration analysis and an estimate of potential excess cancer risk and acute health risks. Concentration analyses are routinely included in EIRs, and most analysts use the U.S. EPA Industrial Source Complex Short Term model (ISC model). The excess cancer risk and acute health risks caused by diesel particulate matter during construction activities to maximally impacted sensitive receptors should be evaluated and disclosed in the DEIR.

Meanwhile, the CEQA guidelines of air districts throughout California contain feasible mitigation measures for diesel exhaust that are routinely required in EIRs. (BAAQMD 1999, pp. 12-14), the Ventura County Air Pollution Control District (VCAPCD 1989, pp. 7-2 to 7-4),⁹ the San Luis Obispo County Air Pollution Control District (SLOCAPCD 1997, pp. 23-27),¹⁰ the San Joaquin Valley Unified Air Pollution Control District (SVUAPCD 2002, pp. 22, 62, 63),¹¹ the Sacramento Metropolitan Air

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⁸ U.S. EPA, Health Assessment Document for Diesel Engine Exhaust, Report EPA/600/8-90/057F, May 2002.

⁹ Ventura County Air Pollution Control District (“VCAPCD”), Guidelines for the Preparation of Air Quality Impact Analyses, October 24, 1989.

¹⁰ San Luis Obispo Air Pollution Control District (“SLOAPCD”), CEQA Air Quality Handbook, A Guide for Assessing the Air Quality Impacts for Projects Subject to CEQA Review, August 1997.

¹¹ San Joaquin Valley Unified Air Pollution Control District (“SVUAPCD”), Guide for Assessing and Mitigating Air Quality Impacts, August 20, 1998, Revised January 10, 2002.

Quality Management District (SMAQMD 1994, pp. 10, 20),¹² the Santa Barbara County Air Pollution Control District (SBCAPCD 1998, pp. 16-18),¹³ Butte County Air Quality Management District (BCAQMD 1997),¹⁴ the Yolo-Solano Air Quality Management District (YSAQMD 1996, Appx. D),¹⁵ and the South Coast Air Quality Management District (SCAQMD 1993, pp. 11-3, 11-4, 11-13 to 11-15).¹⁶ All of these measures should be discussed in the context of CEQA review. They are as follows:

- The engine size of construction equipment shall be the minimum practical size. (SBCAPCD)
- Construction equipment operating on-site shall be equipped with two to four degree engine timing retard or precombustion chamber engines. (SBCAPCD, SLOCAPCD)
- Install high pressure injectors on diesel construction equipment. (SLOCAPCD)
- Use alternative fueled construction equipment. (SJVUAPCD, ADEQ)
- Locally posted and advertised number to report gross-emitting vehicles. (ADEQ)
- Snap acceleration test for heavy-duty diesel vehicles. (ADEQ)
- Require pre-1988 heavy-duty diesel commercial vehicles to meet 1988 federal emission standards. (ADEQ)
- Construction worker trips should be minimized by requiring carpooling and by providing for lunch onsite. (SBCAPCD)
- Use electricity from power poles rather than temporary diesel power generators. (SCAQMD)
- Limit idling to 2 min. (SCAQMD, SJVUAQMD)
- Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use. (SJVUAPCD)
- Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set). (SJVUAPCD)

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¹² Sacramento Metropolitan Air Quality Management District ("SMAQMD"), Air Quality Thresholds of Significance, 1994.

¹³ Santa Barbara County Air Pollution Control District ("SBCAPCD"), Scope and Content of Air Quality Sections in Environmental Documents, 1998.

¹⁴ Butte County Air Quality Management District ("BCAQMD"), Indirect Source Review Guidelines, March 20, 1997.

¹⁵ Yolo-Solano Air Quality Management District, Air Quality Handbook, May 1996 (Construction mitigation is identical to SMAQMD).

¹⁶ South Coast Air Quality Management District, CEQA Air Quality Handbook, April 1993.

- Implement activity management (e.g., rescheduling activities to reduce short-term impacts). (SJVUAPCD)
- During smog season, the construction period should be lengthened to minimize the number of vehicles and equipment operating at the same time. (VCAPCD)
- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing construction activity during the peak-hour of vehicular traffic on adjacent roadways. (SJVUAPCD)
- CARB-certified engines in construction fleet (SCAQMD, ADEQ)¹⁷
- Emission offsets if ROG or NOx emissions exceed 6.0 tons/quarter. (SLOCAPCD)

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D. Inadequate Analysis And Mitigation Of Operational Emissions Impacts

Table 4-3 of the DEIR presents the results of operational emissions estimates determined by the URBEMIS 2002 v8.7 model. The actual URBEMIS outputs are contained in Appendix B of the DEIR. Mr. Christensen reviewed the modeling outputs and identified the following key flaws.

First, Appendix B omits a key component of the standard URBEMIS output: changes made to default values. As discussed further in Mr. Christensen's letter, without disclosing changes made by the DEIR preparers to default values, the accuracy of the data cannot be confirmed.

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Second, the DEIR considered only mobile sources, *i.e.* vehicles, in its impact analysis. It failed to quantify or consider concurrent emissions from "area sources," which include natural gas use, fireplaces, landscaping equipment, consumer products, and architectural coatings. Area sources are equal contributors to operational air quality impacts. The DEIR therefore substantially underestimated operational impacts.

Mr. Christensen re-ran the URBEMIS model, this time including emissions from area sources. As shown in his comments, the combination of area source and vehicular source operational emissions results in a significant unmitigated ROG impact that was not disclosed in the DEIR. This impact must be disclosed to the affected public in a revised DEIR and mitigated to the extent feasible.

¹⁷ Both the U.S. EPA and CARB have established emission limits on new off-road engines. CARB-certified off-road engines are engines that are 3 years old or less at the time of use and which comply with these new low emission limits. This equipment is widely available in the construction fleet. Construction exhaust emissions of all criteria pollutants could be substantially reduced by requiring the use of at least 20% CARB-certified off-road engines in the mix of construction equipment operating on-site, or alternatively, setting a NOx, ROG, and/or PM10 emission reduction goal for the construction fleet. This measure has been required by the SCAQMD and other agencies to mitigate construction emissions.

E. Incomplete Mitigation Of Operational Emissions Impacts.

Based on its (erroneous) finding that operational emissions will be less than significant, the DEIR fails to identify or require feasible mitigation measures recommended by BAAQMD. The BAAQMD CEQA Guidelines contain 25 mitigation measures with 77 supporting measures to enhance effectiveness. These include measures to reduce vehicle trips, reduce vehicle miles traveled, encourage the use of low emission vehicles, improve traffic flows and reduce congestion. Examples of additional effective, feasible mitigation that should be included in the DEIR include, but are not limited to:

- Plant shade trees in parking lots to reduce evaporative emissions;
- Plant shade trees along southern exposures of buildings to reduce summer cooling needs;
- Install only Energy Star rated appliances;
- Install only Energy Star rated roofing materials in non-residential buildings;
- Require residential uses to achieve a 25 percent improvement in Title 24 energy efficiency standards in effect at the time of building permit;
- Require non-residential buildings to achieve a 15 percent improvement in Title 24 energy efficiency standards in effect at the time of building permit;
- Installation of ozone destruction catalysts on residential air conditioning systems to reduce ambient outdoor ozone concentrations;
- Use pervious concrete, traditional concrete, or reflective surfaces instead of blacktop on parking lots and streets to reduce surface temperatures and reduce evaporative ROG emissions;
- Provide electric lawn and garden equipment directly to new homeowners to reduce yard maintenance emissions; and
- Contribute to an off-site emission reduction fund to reduce unmitigated project emissions.

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IV. RECIRCULATION IS REQUIRED

Recirculation of a revised draft is required whenever there is an addition of significant new information in an EIR after the public comment deadline but before certification requires recirculation. Guidelines, § 15088.5, subd. (a). Information is “significant” if it shows either that: (1) a new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented; or (2) a substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance. Recirculation is also required if the EIR is changed in a way that “deprives the public of a meaningful opportunity to comment . . .” or when it reveals that the earlier EIR “was so fundamentally and basically inadequate in nature that public comment on the draft was in effect meaningless.” *Id.*

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The purpose of recirculation is to subject substantive revisions to the same “critical evaluation that occurs in the draft stage,” and to give the public “an opportunity to test, assess, and evaluate the data and make an informed judgment as to the validity of the conclusions to be drawn therefrom.” *Sutter Sensible Planning, Inc. v. Board of Supervisors* (1981) 122 Cal.App.3d 813, 822. An EIR is invalid when significant new information is added to the record late in an EIR process with “no opportunity for meaningful public comment and response.” *Save Our Peninsula Committee v. Monterey County Board of Supervisors* (2001) 87 Cal.App.4th 99, 128-134.

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This DEIR is clearly “fundamentally and basically inadequate” under Section 15088.5 of the Guidelines. Therefore, in order to correct the substantive defects identified in this letter, the City must add significant new information to the DEIR and recirculate it in revised form for further public and agency review and comment.

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V. CONCLUSION

Regrettably, this DEIR does not even come close to fulfilling the investigation, information disclosure, and mitigation requirements of CEQA. A substantial overhaul of the document is required, and recirculation must occur, before the City may lawfully proceed to a Final EIR and consider approving entitlements for this Project.

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Thank you for the opportunity to submit these comments. Please call with any questions.

Yours sincerely,

M. R. WOLFE & ASSOCIATES, P.C.



Mark R. Wolfe

MRW:es
Attachments

LIST OF ATTACHMENTS

Comments of SaveBAREC.org on Draft EIR for Santa Clara Gardens Project

1. ETIC Engineering, *Technical Memorandum re: DRAFT Removal Action Workplan, Former University of California Bay Area Research and Extension Center, 90 North Winchester Boulevard, Santa Clara California, ENVIRON Corporation, December 2003 and Draft Environmental Impact Report, Volume I, Santa Clara Gardens Development Project, City of Santa Clara, EDAW, Inc., March 2003 (April 20, 2006); curricula vitae.*
2. Peter A. Christensen, *Comments on Draft Environmental Impact Report, Santa Clara Gardens Development Project (April 21, 2006); URBEMIS model output; curriculum vitae.*
3. California Department of Toxic Substances Control, *Removal Action Certification – Borello Property, Morgan Hill, Santa Clara County, California (2005)*
4. U.S. EPA, *Teck Trends* (excerpt), “Anaerobic/Aerobic Composting for Removal of Pesticide Contaminants,” Brad Jackson/Frank Peter (August, 2000).
5. U.S. EPA, *An Analysis of Composting as an Environmental Remediation Technology* (excerpts); (April, 1998).
6. Kate Ruder, *Ferns Remove Arsenic from Soil and Water*, Genome News Network (August 6, 2004).

ATTACHMENT 1



TECHNICAL MEMORANDUM

April 20, 2006

To: John Farrow, Mark Wolfe; M. R. Wolfe & Associates, P.C.

From: Eric Zickler, Mehrdad Javaherian; ETIC Engineering, Inc.

Re: Comments on DRAFT Removal Action Workplan, Former University of California Bay Area Research and Extension Center, 90 North Winchester Boulevard, Santa Clara California, ENVIRON Corporation, December 2003.

and

Draft Environmental Impact Report, Volume I, Santa Clara Gardens Development Project, City of Santa Clara, EDAW, Inc., March 2003.

INTRODUCTION

At the request of M. R. Wolfe & Associates, P.C. (Wolfe), ETIC Engineering, Inc. (ETIC) has reviewed the DRAFT Removal Action Workplan (RAW) and the Draft Environmental Impact Report (DEIR) prepared by ENVIRON International Corporation (ENVIRON) and EDAW, Inc. (EDAW), respectively for the above-referenced site. ETIC also reviewed additional documents in support of the DEIR and site cleanup under regulation by the California Department of Toxic Substances Control (DTSC). These additional documents included:

- Phase I Site Assessment Report, University of California Bay Area Research and Extension Center (BAREC), 90 North Winchester Boulevard, Santa Clara, California, 2002, ENVIRON, Appendix D to the DEIR.
- Phase II Site Characterization Report, University of California Bay Area Research and Extension Center (BAREC), 90 North Winchester Boulevard, Santa Clara, California, October 2003, ENVIRON, Appendix E to the DEIR.
- Phase II Site Characterization and Human Health Risk Assessment Report, University of California Bay Area Research and Extension Center (BAREC), 90 North Winchester Boulevard, Santa Clara, California, November 21, 2002, ENVIRON.¹
- Peer Review by Hallenbeck/Allwest of the Phase I ESA and Phase II Site Characterization Report, July 2003.

¹ The Phase II Site Characterization and Human Health Risk Assessment Report, November 21, 2002 was referenced in the DEIR and the Hallenbeck/Allwest Peer review, but was not included in the Appendices to the DEIR. The October 2003, Phase II was provided as Appendix E in the DEIR but was not listed in the DEIR references. The EIR preparers stated that the references in the DEIR were incorrect and would be revised in the Final EIR to correspond to the documents actually presented in Appendices D and E. Amanda Olekszulyn, e-mail to John Farrow, April 12, 2006.

- Voluntary Cleanup Agreement, State of California EPA Department of Toxic Substances Control, 90 North Winchester Boulevard, Santa Clara, California, May 2003.

This memorandum summarizes the results of ETIC's review of these documents. The scope of this review focuses on the general approach and findings of the subject documents with respect to the observed environmental impacts and proposed redevelopment of the subject site, as opposed to a detailed, page-by-page review of each document. Many technical and editorial errors or inconsistencies were identified as part of this review, but are outside of the scope of this memorandum and are not documented herein. Such comments may be provided under separate cover upon request.

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Following a brief overview of the project site, this memorandum presents ETIC's comments on each key document: the Phase II Site Characterization Report, the RAW (including assessment of health risks), and the DEIR. Because the Phase II Site Characterization Report served as the foundation to the approach and findings of the RAW and the DEIR, ETIC reviewed it independently of the RAW and the DEIR. For each key document, comments are organized by key subject matter and findings. Lastly, an overall conclusion summarizing ETIC's findings is included.

OVERVIEW

The project site, previously known as the Bay Area Research Extension Center (BAREC), was formerly used as an agricultural research station by the University of California (UC) and was developed with greenhouses, storage sheds, office buildings, and numerous agricultural testing fields. Agricultural testing began in the 1920s and continued until January 2003. Agricultural testing involved irrigation techniques and pesticide use. Pesticide use was not documented until 1979 and the previous pesticide use for the more than 50 previous years is unknown. Residential development is currently planned at the site subsequent to the execution of the RAW and adoption of the final EIR.

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PHASE II SITE CHARACTERIZATION REPORT

The Phase II Site Characterization Report (Phase II), which was prompted by the findings of the Phase I Site Assessment Report, outlines the approach and results of site characterization activities performed at the BAREC site. The Phase II includes characterization of surface and subsurface environmental impacts beneath the site. Importantly, the Phase II provided the basis for the removal criteria and remedial activities identified in the RAW.

ETIC has identified several key shortcomings associated with the Phase II site characterization efforts. These include the number and depth of soil samples collected, the lack of groundwater data collected, and the characterization of sources other than pesticide application on testing fields. Each of these shortcomings is discussed in more detail below.

8-29

Soil Sampling

Sampling Frequency

The general sampling protocol used in the various rounds of the Phase II investigation included collection of one discrete soil sample taken on ¼-acre centers at two depths, including one between 0-6 inches and one at 2-3 feet; no groundwater samples were collected. This approach resulted in samples collected from approximately 75 locations across the 17-acre BAREC site, which is insufficient given the intended use of the sample results for assessing the extent of soil and groundwater impacts, assessing potential health risks to future residents, and identifying/evaluating remedial alternatives for the site.

Importantly, no specific rationale was provided in the Phase II to support the adequacy of the sampling frequency. The sole attempt to rationalize the number of samples was a generic reference to the use of “DTSC Guidance”, without any specific references to the rationale or the applicability of the reference. DTSC staff advised ETIC that the referenced guidance is DTSC’s *Interim Guidance for Sampling Agricultural Fields for School Sites* (August 26, 2002). This document establishes guidance for evaluating soil at proposed new school sites that are currently or were previously used for certain types of agricultural activities where residual agricultural chemicals may pose a threat to human health and the environment.

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Reliance on this sampling protocol in the DTSC Guidance at the BAREC site is not consistent with its intended uses. First, Section 2.1 of the DTSC Guidance states: “This guidance is specific to agricultural lands where pesticides and/or fertilizers were presumably applied, more or less uniformly, for agricultural purposes consistent with normal application practices”. An agricultural testing facility used for research of pesticides does not constitute normal application practices and is clearly conducive to more extensive (i.e., above normal) conditions from the standpoint of chemicals and water applied, both of which affect the subsurface distribution of chemicals.

Second, section 2.2 of the DTSC Guidance, captioned “Sites To Which The Guidance Does Not Apply,” states that it is not applicable to other land uses that may have obtained at this site, including:

- “agricultural land under or adjacent to structures such as residences, barns, or other outbuildings;”
- “[p]esticide mixing/loading areas, fence lines, ditches, canals, berms, and other areas that may have been treated differently from an agricultural field;
- “former agricultural land that has been graded for construction or other purposes, that has received fill, or had parking lots or structures placed on it following active use as an agricultural field.”

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The DTSC Guidance states that “[t]hese excluded areas require biased, discrete sampling as opposed to the sampling for agricultural fields discussed in this document.” Clearly there must have been a pesticide mixing/loading area at the site and there are also structures on the site,

some of which may have been built on former agricultural land. Nonetheless, there is no indication that these areas were identified and subjected to a biased, discrete sampling protocol.

No other standard approaches to evaluating the adequacy of data were implemented as part of the Phase II. For example, protocols such as the US Environmental Protection Agency's (USEPA) Data Quality Objectives (DQO) process which serves to evaluate data adequacy in support of site/source characterization, assessment of health risks, and evaluation of remedial alternatives, were not followed. This process is particularly applicable to determining data adequacy when there is uncertainty as to the spatial distribution of the samples and where a variable range in detected concentrations is observed; both of these conditions have been noted at the BAREC site.

Subsurface investigations performed at the site are not sufficiently supported with respect to data adequacy because the DTSC Guidance does not apply and no other evaluation of data adequacy was made. This is particularly problematic because the results of the sampling do not fully characterize the extent of contamination and because statistical averages of this data are used as the sole basis for estimating risks and/or screening chemicals for proposed cleanup levels (see discussions in later sections herein). A more detailed and rigorously justified site characterization approach is necessary to address the uncertainties associated with the presence of contamination stemming from the numerous years of agricultural testing facility operations, and to minimize the human health risks associated with redevelopment of the site.

Sampling Depth and Inconsistent Laboratory Analysis

The sampling of the site specific to pesticides yielded 75 sampling locations over 17 acres. The method and rationale for choosing these locations is not documented. This is a critical omission given the persistence of pesticide and arsenic above background concentrations found across the site. Moreover, it is evident that laboratory analysis for all samples was not consistent. Table 4 of the Phase II presents analysis performed at each sampling location and indicates that a sample taken at 0.5 feet below ground surface (bgs) was analyzed using seven analytical methods to determine pesticide concentrations, metal, Cyanide, and pH. However, a sample taken at 3.0 feet bgs taken at the same location was sampled only for arsenic. There was no justification for this practice. Most samples at different depths were collected on the same day and there appears to be no previous evidence to suggest that other constituents are not present. Sampling only for arsenic at depth does not verify that other chemicals did not migrate to or beyond three feet bgs.

The overall depth of sampling implemented also results in incomplete characterization of the site. Pesticide use occurred for over 70 years, without record prior to 1979, and under unknown irrigation and tilling techniques. Yet, most subsurface samples did not exceed three feet in depth and none exceeded four feet bgs; however, concentrations were detected at a final depth of three feet in numerous discrete sampling locations with no further investigation. As a result, there is no evidence that pesticides and/or fertilizers did not migrate to depths below three feet. Consistent use of pesticides and heavy irrigation over the 70-year period will necessarily accelerate migration of chemicals through the vadose zone so that concentrations at depth, including at the water table may be greater than the surficial analysis suggests some 70 years after initiation of land application activities.

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For the above reasons, additional soil sampling is required to properly quantify the magnitude and extent of chemicals beneath the BAREC property.

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Groundwater Sampling

No groundwater sampling was performed at the site. The use of pesticides, tilling, and long-term irrigation activities are all indicators of the potential presence of chemicals at depth, including those potentially reaching shallow groundwater reportedly present at 20 to 30 feet bgs. Based solely on a snap shot (70 years after initiation of land application activities) of shallow soil data, the Phase II concludes that no impacts to the groundwater have occurred. Additionally, soil samples taken at the deepest location in boreholes (generally three feet) had detections of dieldrin, 4,4'-DDT, and 4,4'-DDE, demonstrating that these chemical did migrate at least to that depth. Because pesticide data from other samples taken at the three-foot depth was not analyzed, there is no empirical validation of the conclusion that groundwater has not been impacted by site activities. At a minimum, groundwater samples should be collected at locations where arsenic is above background and residual pesticide concentrations are known to exist at depth.

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Incomplete Laboratory Analysis of Pesticide Suite

As indicated in the RAW, records of the specific types of pesticides used at the BAREC site are not available for most of the period of site usage. For the period of 1979 through 2003, some ninety specific types of pesticides were known to have been used at the site. However, the laboratory analyses of soil samples performed at the site were limited to analysis of only fourteen pesticides. The list of pesticides analyzed in the soil samples is a small fraction of pesticides commercially available/commonly used throughout the period of operations, known to have been used from 1979 and 2003, and potentially present beneath the BAREC site. As a result, many pesticides other than those analyzed for and included as chemicals of potential concern (COPCs) are likely to be present at the site.

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The rationale used in the RAW for exclusion from laboratory analysis of the more than 75 pesticides known to have been used, not to mention others which are likely to have been used prior to the period of available records, is based entirely on a highly uncertain, unsupported, undocumented, and arbitrary approach for exclusion of such analyses. The Phase II states that three different methods were used to determine that no laboratory analysis was required for 76 of the 90 chemicals used at the site, referencing Tables 3a, 3b, and 3c. These tables are not included in the Phase II document, so there is no documentation for any of the calculations or conclusions. Without that documentation, the Phase II document cannot provide a sufficient basis for the decision not to test for these substances.

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It appears that one method for exclusion was the use of literature-derived chemical half-lives. However, these half-lives are known to vary from one source to another and were estimated under controlled laboratory conditions that do not necessarily correspond to actual biological conditions at the BAREC site. Thus, even if the calculations regarding half-lives, last dates of usage, and mass removal had been presented, this approach does not provide an adequate basis to draw conclusions about which pesticides are not likely to be present.

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It appears that arbitrary concentration estimates were determined for other chemicals and used to conclude their presence is insignificant. Inconsistent approaches to these calculations were apparently used; it appears that dilution was assumed for some chemicals but not others and half-life assumptions were apparently made for some and not others. Again, the calculations were not presented because the referenced Tables 3b and 3c were omitted. However, this approach is also inconsistent with standard practice, lacks supportable scientific basis, and is entirely arbitrary. No effort was made to substantiate this arbitrary approach by actual field sampling and analysis.

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Typical industry practice is to analyze several samples for the entire list of chemicals used or potentially used at the subject site. Based on those results, a more focused suite of analytes, typically focused on the chemicals shown to be present in the original round of sampling and/or otherwise known to be most mobile and toxic chemicals, is typically identified for analysis in subsequent samples. Correspondingly, DTSC's guidelines for hydrogeologic characterization at hazardous substance release sites (DTSC,1994) indicate "the suite of chemical analyses must be adequate to identify the full range of contaminants that may occur at the site. Records of chemical use or disposal should be evaluated to identify constituents of concern. Analysis for all contaminants potentially occurring at the site should be performed."

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Sampling at the BAREC site should be accordingly reevaluated with a more logical and standardized (per DTSC's guidelines) approach to identifying the suite of analytes. Failure to conduct broad spectrum analyses at this research facility where numerous unknown pesticides were used is a critical omission.

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Importantly, exclusion of these pesticides from the site investigation process through the approach used in the Phase II may significantly undermine the public health risk assessment process, which in turn can render the proposed RAW useless from the standpoint of protecting future site occupants.

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Characterization of Other Sources

Investigation of other potential sources at the site demonstrates that an inadequate number of samples were collected from the site in support of conclusions drawn regarding the evaporation pond and the underground storage tanks (USTs), and possibly the leach pit. Specifically, a total of three soil samples were collected from the two UST sites at a depth of two (2) feet below the tanks. The USTs were removed by UC staff and regulatory closure was approved by the City of Santa Clara Fire Department in 1993. Given the inherent nature of older USTs to leak and the lack of sufficient data beneath the USTs, additional soil and groundwater samples should be collected to properly characterize the UST area. This includes determination as to whether volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), and fuel oxygenates may exist in soil and groundwater, all of which trigger specific exposure pathways and analyses from a health-risk assessment and remedial alternatives standpoint (see discussion below).

8-39

The Phase II report identifies the evaporation bed as a disposal site for diluted pesticides from 1973 to 1985. Closure of the site in 1987 included analysis of composite samples collected by Dames & Moore from zero to 12 inches (listed in Table 2 of the 2003 Phase II) in the evaporation bed, and four samples collected from the evaporation bed excavation after the liner

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was removed. One detection was reported in the excavation of chloropropham at a concentration of 2.8 mg/kg, however the concentration of chloropropham detected in the evaporation bed itself was 0.4 mg/kg (Table 1 of the 2003 Phase II). Additional sampling conducted by ENVIRON in 2003 measured concentrations of arsenic to depths of 7.8 feet bgs beneath the evaporation pond and 8.5 bgs adjacent to the sediment trap; however, samples were not analyzed for any other constituents.

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The conclusion was drawn in the Phase II that operation of the bed had no significant impact on the environment. However, the data available do not support this conclusion given that the available data from the 1987 closure are contradictory and limited since only the top two underlying inches of soil were sampled. The data also suggest that the evaporation bed liner may not have had the integrity suggested in the language of the Phase II. At a minimum, groundwater and soil samples at depth should be collected at these two locations and analyzed for the suite of chemicals consistent with pesticide use at the site to identify the potential migration of chemicals through the vadose zone and possibly to the groundwater. It is important to note that closure activities at the UST sites and evaporation pond occurred when the facility was operating as an agricultural research station and not intended to accommodate a residential development. Thus, reliance on those closing studies is inappropriate in a cleanup for unrestricted residential use.

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Investigation of the leach pit indicated the absence of chemicals (VOCs, semi-VOCs, pesticides, and TPH) in a 7-foot bgs sample, where historical application (through 1977) of wastewater occurred. Unlike investigations elsewhere at the site, the absence of detections in the single 7-foot sample is a positive sign; however, this data is from some thirty years after termination of pit usage and may not adequately reflect chemical transport exacerbated by land application of wastewater below the sampled depth and potentially to groundwater prior to 1977. Given the planned use of the site for residential purposes, sampling of groundwater may be prudent to confirm the findings documented in the Phase II.

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RAW

The generation of any RAW or other remedial effort submitted to the DTSC is usually associated with a Human Health Risk Assessment (HHRA). However, no HHRA is referenced or associated with this particular RAW. The extent of cleanup and chemicals to be addressed are based on the findings of the Phase II previously discussed, which does not include an HHRA. The Phase II inadequately characterizes the site relative to past use, but does establish a clear picture of a large extent of contamination. In addition, the Phase I establishes a long history of uses of various hazardous chemicals. Both of these documents would indicate the need for an HHRA prior to the development of a RAW to precede residential development.

8-43

Human Health Risk Assessment

As noted above, an HHRA was prepared on November 21, 2002 by ENVIRON (the “2002 HHRA”) as part of an earlier Phase II site characterization.² Although this earlier Phase II was referenced in the DEIR, a later version that omitted the HHRA was the only Phase II actually included in the DEIR – as Appendix E.

8-44

The Voluntary Cleanup Agreement requires the Department of General Services (DGS) to submit and DTSC to approve “all background information, sample analysis results, environmental assessment reports, and any other information pertinent to hazardous substance management and/or release, characterization and cleanup of the Site.”³ However, ETIC ascertained from DTSC staff that DTSC did not receive or review the 2002 HHRA.⁴ DTSC comment letters also confirm that their reviews did not include the November 21, 2002 Phase II that contained the 2002 HHRA.⁵ No explanation has been provided as to why the 2002 HHRA was omitted from drafts of the Phase II Site Characterization Report reviewed by DTSC or why the recommendations in the Phase II or the RAW do not reference it.

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Nonetheless, ETIC has reviewed the 2002 HHRA because it was apparently referenced by the DEIR and by the Hallenbeck/Allwest peer review cited in the DEIR, and because the review highlights the need for an adequate HHRA to support the Phase II and the RAW.

As previously indicated, DTSC guidelines (DTSC, 1999 and 2002) call for an HHRA as the basis for development and selection of remedial action alternatives for contaminated sites. Importantly, an HHRA establishes:

- COPCs and their respective concentrations at points of potential human exposure;
- Impacted media (e.g., soil, groundwater, air);
- Potential exposure pathways corresponding to planned use of the site (e.g., incidental ingestion of soil, dermal contact with soil, inhalation of airborne particulates, ingestion of home grown vegetables, etc.);
- Likely receptors (e.g., daily site residents, future construction/maintenance workers, site visitors);
- Estimates of carcinogenic risks and non-carcinogenic hazards for each COPC, exposure pathway, and receptor, including cumulative risks from exposure to all COPCs; and
- Back-calculation of acceptable levels of each COPC within its respective media (e.g., cleanup levels for soil) such that potential exposure to these levels would not correspond to significant risks or hazards following planned use of the site. These cleanup levels would then be carried over to the RAW and serve as the basis for evaluation, selection,

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² Phase II Site Characterization and Human Health Risk Assessment Report, University of California Bay Area Research and Extension Center (BAREC), 90 North Winchester Boulevard, Santa Clara, California, November 21, 2002, ENVIRON, section 5.0.

³ VCA, Exhibit C, Task 1.

⁴ Personal communication with Virginia Lasky, DTSC, April 17, 2006.

⁵ Barbara Cook, DTSC, letter to Larry Buczyk, DGS, December 30, 2002 (referencing a Site Characterization Report dated November 18, 2002 and making no reference to an HHRA); Barbara Cook, DTSC, letter to Ron Small, DGS, October 6, 2003 (referencing a July 2003 Site Characterization Report and making no reference to an HHRA); Barbara Cook, DTSC, Letter to Ron Small, DGS, November 10, 2003 (referencing a Site Characterization Report dated October 2003, apparently the report in Appendix E to the DEIR, and making no reference to an HHRA).

and implementation of a remedial alternative, such as defining the extent of soil excavation as recommended in the RAW for the site.

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The need for an HHRA, the general shortcomings of the 2002 HHRA prepared for the site, and the ramifications of the latter on the recommended remedial approach outlined in the RAW are summarized below.

COPCs

In order to adequately quantify potential risks to future site occupants following the planned redevelopment of the BAREC site, all chemicals detected at the BAREC site that could potentially pose health risks to future site occupants must be included in the list of COPCs. As previously discussed herein, the actual list of pesticides used at the BAREC site throughout the entire duration of past operations is unknown. Ninety pesticides were known to have been used within a portion of the time of historical operations (1979 through 2003). Yet, only fourteen pesticides were ever analyzed for in the soil samples at the BAREC site, and only nine pesticides were included as COPCs in the HHRA (see page 28 of 2002 HHRA). The list of pesticides analyzed in the soil samples is a small fraction of pesticides commercially available/commonly used throughout the period of operations and potentially present beneath the BAREC site. Importantly, many pesticides other than those analyzed for and included as COPCs may be present at the site and may contribute significantly to the overall exposure/risk at the BAREC site. Correspondingly, the 2002 HHRA is likely to underestimate potential health risks to future site occupants.

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It is also worth noting that the previously discussed rationale (based on estimated half-life of chemicals and estimates of "mass removed" due to natural degradation of pesticides) used as the basis for not analyzing for other pesticides is highly uncertain, arbitrary, and is not standard practice for identifying the list of chemicals to analyze or include as COPCs.

8-48

For the above reasons, the HHRA for the site should be redone based on a complete data set that properly reflects the entire list of possible COPCs in soil and groundwater, including an assessment of data quality with respect to USEPA criteria for risk assessments.

8-49

Impacted Media

Impacted media considered in the HHRA for the site were limited to soil and air (airborne particulates). As previously discussed, no groundwater data have been collected at the site and the conclusions regarding the absence of groundwater impacts are based entirely on the distribution of chemicals analyzed for in shallow soils. This approach erroneously ignores some 80 years of irrigation/water application to unpaved land, which is likely to have increased the potential for migration of COPCs beneath the shallow soil depths analyzed at the site and is likely to have impacted groundwater present at 20 to 30 feet beneath the ground surface.

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The HHRA should be redone based on additional sampling of deeper soils and groundwater. In the event that such sampling reflects the presence of COPCs, including VOCs emanating from the former USTs and/or the leach pit (associated with past application of wastewater) in deeper soils and/or groundwater, groundwater and ambient (indoor and outdoor) air should be included as potentially impacted media and quantitative evaluation of inhalation pathways should be

8-51

incorporated into the HHRA. Should these media be impacted at the site, the 2002 HHRA is likely to underestimate potential health risks to future site occupants.

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Potential Exposure Pathways and Receptors

Potential exposure pathways and receptors (i.e., exposure scenarios) included in the HHRA for the BAREC site included incidental ingestion of soil, dermal contact with soil, and inhalation of airborne particulates from soils for future residents and construction workers. To the extent that future site use corresponds to single family homes with unpaved back yards, there is a potential for reliance by future residents on home grown vegetables and produce. This exposure pathway was not evaluated in the HHRA, but may contribute a significant dose of COPCs as part of the daily dietary intake of home-grown vegetables and produce by daily site occupants. Correspondingly, the 2002 HHRA underestimates potential health risks to future site occupants. At a minimum, the HHRA should be revised to include this exposure pathway for future residents.

8-52

Once properly characterized, should groundwater beneath the site be shown to contain COPCs, then complete exposure pathways associated with groundwater must be incorporated into the HHRA. These may include ingestion and dermal contact with groundwater (unless there is a deed restriction prohibiting development of groundwater resources onsite for irrigation or domestic uses), or inhalation of volatile emissions from groundwater (if VOCs are shown to be present at the site).

8-53

Exposure Point Concentrations

Within the 2002 HHRA, exposure point concentrations related to COPCs in soil are based on the 95% upper confidence limit of the mean concentration (95% UCL) of detections for each chemical. This approach is presented in the 2002 HHRA as the reasonable maximum exposure (RME) scenario.⁶ However, in actuality, this approach corresponds to an approximation of potential risks reflecting a central tendency exposure (CTE) scenario. Given the significant uncertainty in the site characterization data (i.e., limited data across a large area and insufficient laboratory analyses of relevant pesticides) and the sensitivity associated with planned residential use of the BAREC site (including the presence of sensitive receptors such as children), the true RME scenario for the BAREC site is considered to be one based on the maximum detected soil concentrations. This approach is consistent with DTSC (1999) risk assessment guidelines, which insist on use of USEPA-defined exposure factors reflecting an RME scenario and further indicate the following:

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- "Use the maximum contaminant value which was found from sampling as the exposure point concentration."; and

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⁶ The 2002 HHRA states that its approach is "consistent with estimating the reasonable maximum exposure (RME) case." (2002 HHRA, p. 32.) Note that while the 2002 HHRA further states that "[t]he RME case is defined in Section 5.2.6," the report does not actually contain a section 5.2.6.

- “In cases where there is adequate characterization, and subject to review and approval by the project manager at the Department’s Regional office, the 95 percent upper confidence limit of the arithmetic mean may be used for the exposure point concentration.”⁷

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Similarly, for estimation of the airborne concentration, particulate emission factors (PEFs) should be applied to maximum detected soil concentrations (DTSC, 1999).

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Importantly, risk estimates based on maximum detected concentrations allow for proper decision making in the removal action process, since exposure by sensitive receptors (e.g., children) to maximum detected levels (as opposed to statistical averages such as 95% UCLs reflecting CTE scenarios) may occur and result in significant health risks. By implementing only a CTE scenario, the 2002 HHRA is likely to significantly underestimate potential health risks to future site occupants.

8-58

Toxicity Data

Consistent with the date of the report, the HHRA makes use of toxicity data which date back to 2002. More recently, DTSC (2005) has developed risk-based concentrations (RBCs) for chemicals including arsenic (e.g., oral cancer potency factor of $9.45 \text{ (mg/kg-day)}^{-1}$ instead of $1.50 \text{ (mg/kg-day)}^{-1}$ used in the HHRA), which, when utilized, would yield significantly higher risk estimates. The HHRA should be revised to reflect current toxicity data, RBCs, and exposure factors outlined by DTSC guidance.

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Risk Assessment Results

Table 19 of the HHRA suggests that the future potential cancer risk and non-carcinogenic hazard associated with residential receptors approximate 3×10^{-5} and 0.8, respectively. These calculations correspond to a CTE scenario using 95% UCL concentrations for COPCs in soil. While the cancer risk of 3×10^{-5} is within the target acceptable risk range of 1×10^{-4} to 1×10^{-6} outlined by the USEPA, this cancer risk exceeds the target acceptable risk level of 1×10^{-6} typically used for protection of sensitive land uses such as residential properties. Moreover, risk estimates for specific portions of the site (shown in Table 22 of HHRA) all exceed 1×10^{-5} , confirming similar findings across the entire site.

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For comparison purposes, Table 1 below presents a summary of potential health risks associated with the maximum detected concentration of each COPC identified by the 2002 HHRA, using the exposure and toxicity parameters defined in the HHRA. As indicated in this table, if exposure to site maximum concentrations is considered, the cumulative carcinogenic risk increases to 1.03×10^{-4} , which exceeds the USEPA range and significantly exceeds the typical criteria applied for residential sites. This confirms that corrective action is necessary to reduce risk levels to insignificant levels.

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⁷ Here use of the maximum contaminant values, not the mean values, is required for two reasons. First, for the reasons discussed above, there was not an adequate characterization of the site. Second, there is no indication that the use of the mean value was reviewed and approved by the Department’s Regional office. As noted, the 2002 HHRA was not even furnished to DTSC.

Importantly, the 2002 HHRA does not include any back-calculation of risk-based cleanup levels in support of the RAW. Instead, the RAW entirely disregards the 2002 HHRA and relies instead on the USEPA PRGs for dieldrin in residential soils and the presumed background level of arsenic as its cleanup level. No other COPCs and related cleanup levels are considered in the RAW, despite the fact that other COPCs are shown to be present and are shown to contribute to the overall risk at the site. As a result, the proposed cleanup levels in the RAW do not necessarily alleviate cumulative health risks from multiple chemicals and from multiple pathways shown to be present at the site. This fundamental inconsistency and other shortcomings of the proposed cleanup levels are discussed in more detail below.

**Table 1. Recalculation of Risks using Maximum Detected Soil Concentrations
Residential Scenario- BAREC Site**

COPC	Maximum EPC (mg/kg)-Table 5 of Environ (2002)	Carcinogenic RBC (mg/kg)-Table 20 of Environ (2002)	Carcinogenic Risk
gamma-BHC-Lindane	0.094	5.00E-01	1.88E-07
alpha-Chlordane	0.015	4.20E-01	3.57E-08
gamma-Chlordane	0.017	4.20E-01	4.05E-08
4,4'-DDE	1.5	1.60E+00	9.38E-07
4,4'-DDT	0.38	1.60E+00	2.38E-07
Dieldrin	0.24	3.40E-02	7.06E-06
Diquat	7.5	NA	NA
Endrin	0.03	NA	NA
Heptachlor Epoxide	0.014	1.00E-01	1.40E-07
Arsenic	36	3.90E-01	9.23E-05
Barium	440	NA	NA
Beryllium	0.52	1.10E+03	4.73E-10
Cadmium	3.6	1.70E+00	2.12E-06
Chromium	55	2.10E+02	2.62E-07
Cobalt	12	9.00E+02	1.33E-08
Copper	39	NA	NA
Cyanide	0.32	NA	NA
Mercury	0.28	NA	NA
Nickel	60	9.70E+03	6.19E-09
Vanadium	44	NA	NA
Zinc	99	NA	NA
Cumulative Risk:			1.03E-04

EPC- Exposure Point Concentration in Soil
RBC- Risk-based concentration

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RAW Cleanup Levels and Approach

The RAW's approach to remediation is governed entirely by two COPCs; arsenic and dieldrin. In contrast, it is apparent from the Phase II and 2002 HHRA results that other pesticides and metals are present at the site and contribute to the cumulative future health risks to daily site occupants. Therefore, the manner in which dieldrin and arsenic removal is proposed is

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inconsistent with standard practices, does not honor the Phase II and 2002 HHRA results, and is additionally flawed based on the previously discussed issues related to adequacy of soil and groundwater sampling, evaluation of complete exposure pathways and intake assumptions, and analysis of a full suite of possible COPCs present at the site.

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In addition to the above-referenced shortcomings and limitations, the proposed cleanup levels for arsenic and dieldrin and the proposed approach to implementation of these cleanup levels are further flawed as discussed below.

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In evaluating the proposed cleanup of arsenic and dieldrin, the removal objectives listed in the RAW were noted as:

- Minimize exposure of future site residents to surface soil containing arsenic above the 20 mg/kg level;
- Ensure the mean concentration of dieldrin in an individual field is below 30 µg/kg; and
- Leave the site in physical condition that is compatible with single-family residential use.

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Arsenic Cleanup Level

The cleanup goal of 20 mg/kg for arsenic proposed in the RAW is suggested as the estimated background level for arsenic at the BAREC site. Its origin is apparently based on comparing three sources: the results of background levels cited by the Scott study (1991) for a site located “between 5 and 10 miles” from the BAREC site and known to be characterized with different lithology (Phase II, 2003); site-specific “background” data collected from a single sample at a location “not known to have been impacted” on the BAREC site, but apparently not known to be free of pesticide contamination (Phase II, 2003, p. 17); and data from a shopping center where the average arsenic background concentration was established to be 12 mg/kg and the maximum background level was established to be 20 mg/kg.

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Importantly, risk-based residential screening/cleanup levels for arsenic include the Preliminary Remediation Goal (PRG) established by the USEPA as 0.39 mg/kg for arsenic and the California health-based direct exposure goal as 0.07 mg/kg for residential use. Because naturally occurring levels of arsenic in California soils often exceed these health-based concentrations, DTSC’s California Human Health Screening Levels (CHHSL) guidelines allow for an alternative approach to the use of risk-based cleanup levels. This alternative approach entails determining site-specific background levels (if the site has uncontaminated portions) or values from an adjacent, uncontaminated property characterized by similar lithology.

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The DTSC CHHSL guidelines preclude use of the Scott study as an indicator of background concentration because of the different lithology. They also preclude use of the background datum from the BAREC site because the location was not known to be free of impacts from past operations and only one site was sampled, not the minimum of four required by DTSC Guidance.

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The nearby shopping center (0.3 miles to the south) may be the most representative option, with a documented average background concentration of 12 mg/kg. The arsenic data used to estimate this background concentration reportedly ranged as high as 20 mg/kg. No additional data are provided in the text regarding the number and depths of samples taken at the shopping center site and what the site conditions were. The RAW arbitrarily and preferentially adopted the higher

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range of the arsenic background data (i.e., 20 mg/kg) at the nearby shopping center as the cleanup level for the BAREC site. Furthermore, as discussed below, the RAW concluded without any support that if known areas of concentration higher than 20 mg/kg are removed at the BAREC site, the average concentration of arsenic remaining across the site will approximate 12 mg/kg.

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The above approach is highly inconsistent with the very study it relies on and with DTSC's guidelines. In short, either a risk-based cleanup level (e.g., 0.07 mg/kg) should be used, or a properly developed background level should be recommended as an alternative. Background levels for arsenic in California soils have been well documented and defined as 0.6 to 11 mg/kg, with a mean of approximately 3.5 mg/kg (Bradford et. al. 1999). Alternatively, the study at the nearby shopping center has concluded that the average background level is 12 mg/kg. Arbitrary adoption of the upper end of the range of background levels from the nearby site, as done in the RAW, does not properly justify such a background/cleanup level.

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Furthermore, the sampling data in the Phase II itself is inconsistent with the conclusion that the average background concentration is even as high as 12 mg/kg. Table 10 of the Phase II determines a site-wide average of 11 mg/kg from the analysis of 136 samples taken across the site from shallow and deep locations. Many of these samples are acknowledged to be above the proposed average cleanup level for arsenic and therefore could be classified as contaminated. If the average concentrations of samples across the site is 11 mg/kg, counting contaminated soil, then 12 mg/kg as the pre-contamination background level and cleanup goal is clearly not justified, much less a 20 mg/kg cleanup goal ceiling.

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The cleanup level for arsenic should be reevaluated in a manner consistent with standard practices and guidelines adopted by DTSC, and should further account for potential cumulative affects from other chemicals present at the site. Per DTSC's practices, this evaluation should be carried out through a sound, defensible HHRA supported by an adequate site characterization process.

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Dieldrin Cleanup Goal

The cleanup goal for dieldrin is established to correspond to a mean concentration across an individual field of 30 µg/kg, which corresponds to the USEPA risk-based PRG for residential soils. The 30 ug/kg value may be considered a reasonable risk-based value protective of the proposed land use, assuming that the previously raised issues such as not accounting for all complete exposure pathways at the site and ignoring contribution of risk from other COPCs are otherwise addressed. However, no such evaluation has been performed in the RAW to justify this cleanup level. As with the arsenic cleanup level, the dieldrin cleanup level should be developed as part of an HHRA process which accounts for all relevant exposure pathways and the cumulative affect of other COPCs, both supported by a defensible site characterization process.

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Furthermore, the proposal in the RAW that the extent of excavation be determined by statistical averages (or mean) of site data is not consistent with standard practice, nor does it ensure protection of human health across the site. This shortcoming is discussed further below for both arsenic and dieldrin.

8-76

Single-Family Residential Use

One of the objectives of the RAW is to leave the site in a physical condition compatible with single-family residential use. However, the current excavation plan does not adequately address removal criteria with respect to dieldrin and arsenic removal. Based on the excavation plan outlined in the RAW, excavation criteria for Field 4 permit up to 20 mg/kg of arsenic to remain in soil and over 30 µg/kg of dieldrin to remain in certain “hot spots”. The removal plan does not properly address the purpose of cleanup goals and uses averages to achieve these cleanup goals, particularly for the removal of dieldrin.

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The removal criteria established for Field 4 relative to arsenic requires excavation of one foot of soil in a grid formation and sampling to confirm that no concentrations above 20 mg/kg exist in the next underlying layer. Average background concentration for arsenic is determined to be 12 mg/kg with a maximum background concentration of 20 mg/kg. Using the methodology for soil removal established in the RAW, the average arsenic concentration remaining could easily exceed 12 mg/kg, particularly if multiple high level (e.g., 19 mg/kg) concentrations detected in soil are determined to be below the cleanup goal. These soils would be determined suitable to remain in the subsurface even if the average background concentration exceeds 12 mg/kg. The RAW should establish more stringent removal criteria (i.e., lower concentrations) to be consistent with the original justification for using the maximum background concentration as the cleanup goal and establish a more realistic background concentration that resembles actual site-specific conditions.

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Removal criteria for dieldrin are documented as the removal of one hot spot in Field 1 with a concentration of 240 µg/kg, resulting in the reduction of the average concentration in the field to below the 30 µg/kg PRG. Importantly, the excavation plan does not address sampling locations F3-A-0.5 and F3-B-0.5 where dieldrin concentrations are significantly above the PRG. This is justified in the RAW by using the average dieldrin concentration in a particular field as the cleanup goal. By not removing these two hot spots, the RAW does not remove a potential health risk from the site and does not address the future impacts of leaving contaminated soil behind. Additionally, no further samples were collected in the area to determine the extent of the elevated dieldrin contamination; the next closest sample in Field 3 is approximately 150 feet away from these elevated sampling locations. To adequately determine that these two concentrations are isolated, additional samples need to be collected in and around these hot spots.

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In summary, the recommended approaches to screening arsenic and dieldrin versus their respective cleanup levels are inconsistent with one another, and necessarily result in leaving known concentrations in place that exceed the cleanup goals established in the RAW.

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Onsite Water Supply Well

The RAW does not address the existing onsite water supply well used historically for the agricultural testing activities. This well, which penetrates a deeper aquifer beneath the site, should be properly abandoned so that it does not serve as a potential conduit for preferential migration of contaminants in its vicinity. Groundwater samples should be collected from this well to characterize the deeper aquifer and further provide support to justification for its fate.

8-81

DEIR

The DEIR characterizes the conclusions in the Phase II and the action proposed by the RAW as adequate to accommodate the proposed residential redevelopment of the site. However, for the reasons stated in previous sections, the assessment of environmental impacts and related mitigation measures are not adequate as currently outlined in the DEIR, its Appendices, and the RAW. In addition to the reasons stated above, the following additional omission is observed in the DEIR/RAW process.

8-82

Future Risk Management and Deed Restrictions/Institutional Controls

The proposed approach in the DEIR to leave contaminated soils (and possibly groundwater) behind after implementation of the RAW warrants the need for a process to notify future site occupants of the presence of this contamination, and to outline specific steps that must be taken in the event that future site activities may result in exposure to the remaining contamination.

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Based on DTSC's guidelines and practices, this process is typically accomplished via a risk management plan (RMP), which may include relevant deed restrictions and/or institutional controls. At a minimum, an RMP would be needed for the following reasons:

- Outlining a restriction on groundwater use beneath the site, especially because there is no data to indicate the presence of absence of any contamination;
- Imposing restrictions on consumption of home-grown vegetables and produce to limit potential exposure to COPCs left behind; and
- Outlining the need for health and safety measures and soil handling/management practices should future site occupants undertake activities which result in exposure to COPCs remaining beneath the site.

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The RMP should be properly recorded with input from DTSC and its legal counsel, accounting for a process by which the RMP is recorded on the deed of the property, such that future property owners and site occupants will be made aware of the remaining contamination and related measures.

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CONCLUSION

Based on a review of the RAW, DEIR, and select related documents, ETIC has concluded that several shortcomings exist with the RAW and DEIR as currently documented. These shortcomings include:

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- Inadequate site characterization (sampling and laboratory analysis) in support of evaluating the nature and extent of contamination, identifying chemicals of potential concern, estimating related health risks to future site residents, and developing a remedial plan to ensure protection of future site occupants;
- Inadequate assessment of human health risks associated with future development of the site;
- Inadequate and inconsistent approach to establishing cleanup criteria;

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- Inadequate and inconsistent approach to use of cleanup criteria in support of estimating the extent of soil (and contaminant) removal;
- Inadequate risk management measures for protecting future site occupants from contamination proposed to be left behind following implementation of the RAW.

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8-91

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MEHRDAD M. JAVAHERIAN
Vice President and Technical Director

EXPERTISE	Project and Program Management Chemical Fate and Transport Modeling Toxicological Risk Assessments Litigation Support and Expert Witness Testimony	Remedial Investigations Remedial Feasibility Studies Risk Management Practices Regulatory Negotiation Support
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EXPERIENCE

Over 15 years of experience with a unique background in quantitative hydrology, environmental toxicology, and environmental engineering. Extensive research/development and project experience in the areas of contaminant plume delineation, application of risk management and innovative remediation techniques in support of regulatory compliance, human health and ecological risk assessments, mathematical modeling of flow and transport processes, and litigation support/expert witness testimony. Served on International Commission on Ground Water, served as a consultant to the US Environmental Protection Agency (USEPA) and the American Petroleum Institute (API) in developing risk assessment and modeling guidelines, and authored over 40 publications in the field of chemical fate and transport modeling, environmental risk assessments, and environmental remediation. He is a registered engineer (49225).

Program Management – Dr. Javaherian has extensive experience in program and project management in both the public and private sectors, including leading technical and regulatory components of RCRA and Superfund projects ranging in size from \$100,000 to \$20,000,000.

Remedial Investigations and Feasibility Studies – As program and project manager on a wide range of public and private sector projects, Dr. Javaherian has provided lead technical oversight on preparation of remedial investigations, feasibility studies, remedial and corrective action plans, and site closure reports at over 100 sites throughout the US. His experience includes strategizing, developing, negotiating, and implementing various field investigation, risk management, and innovative remediation technologies, with particular emphasis on collecting only data that are both necessary and sufficient to support risk-based decision making at sites characterized by heavy metals, radionuclides, pesticides/PCBs, petroleum hydrocarbons, chlorinated solvents, perchlorate, NDMA, and DNAPL contamination overseen by federal, state, and local regulatory agencies throughout California and in over 40 States across the US.

Risk Assessment – During the past 15 years, Dr. Javaherian has performed extensive work on research, development, and implementation of toxicological and risk assessment guidelines for application of risk-based methodologies, including ecological risk assessments, human health risk assessments, and development of risk-based cleanup levels. Dr. Javaherian's project experience includes over 100 human health/ecological risk assessments and contaminant fate and transport studies, including multiple studies at sites characterized by heavy metals, radionuclides, pesticides/PCBs, and NAPL-impacted sites throughout the US.

Mathematical Modeling – Dr. Javaherian has performed extensive work on research, development, and application of analytical and numerical models for evaluation of flow and transport processes in air, soil,

Dr. Mehrdad Javaherian
Page 1 of 3

groundwater, and surface water systems. He is the developed of over 30 proprietary and public domain computer modeling programs, including MULTIPHASE, a three-dimensional, finite element model for simulation of non-isothermal multiphase flow and transport. This model has been used extensively for evaluation of innovative remedial technologies, including surfactant and alcohol flooding, steam injection, and enhanced reductive dechlorination. Dr. Javaherian has also authored and/or provided input on numerous guidance manuals for simulation of fate and transport processes, including contributions to the USEPA and API. Dr. Javaherian has used a broad range of models, ranging from simplified analytical models to highly complex 3-Dimensional animation using numerical models, to simulate fate and transport processes in support of studies involving simulation of artificial recharge of recycled water, plume allocation, in-situ remediation design, and groundwater management.

Litigation Support/Expert Witness Testimony – Dr. Javaherian has extensive experience in providing litigation support and expert witness testimony in the fields of environmental modeling and risk assessments. He has provided deposition, courtroom, and/or mediation testimony on over 35 cases throughout California and across the US, including projects involving design and implementation of remedial strategies at shoreline-area sites characterized by land application of hazardous wastes. In addition, Dr. Javaherian has lectured on his litigation/expert witness experience at several seminars, including the Environmental Law Conference sponsored by the State Bar of California. He also served as speaker and panelist at the 2002 Legal Issues Symposium sponsored by the California Redevelopment Agency.

Research, Development, and Lecture Experience – Dr. Javaherian has extensive experience in performing research and development and lecturing on a wide range of topics related to water resources, mathematical modeling, and environmental risk assessments. His experience includes:

- 2004-present: Research and Development: Advanced Techniques for Modeling In-Situ Biological Transformation of MTBE and TBA. Ongoing Research and Development, American Petroleum Institute, Houston, TX.
- 2003: Effects of Geologic Characterization on Plume Behavior and Remediation, Annual Conference on Contaminant Fate and Transport, ExxonMobil Corp., New Orleans, LA.
- 2002: Lecturer on Use of Environmental Risk Assessments and Institutional Controls to Limit Environmental Cleanup Costs, California Redevelopment Association Legal Issues Symposium, Monterey, California, August 2002.
- 1999: Lecturer on Estimation and Allocation of Environmental Response Costs in Support of Litigation, 1999 Environmental Law Conference, Yosemite, CA.
- 1998: Lecturer on Numerical Modeling of Groundwater Flow and Solute Transport, Graduate Program in Environmental Engineering., San Francisco State University.
- 1998: Lecturer on Use of Multi-Phase Flow and Transport Models for Oil Reservoir Simulations, Iran University of Science and Technology, Teheran.

EDUCATION

Ph.D., Mathematical Modeling, Stanford University, 1995
M.S. Toxicology, University of California, Berkeley, 1991
B.S., Civil Engineering, California Polytechnic University, San Luis Obispo, 1989

Dr. Mehrdad Javaherian

Page 2 of 3

SELECT PUBLICATIONS AND RECENT PRESENTATIONS

Rahman, K., and Javaherian, M., 2005 (in Press). Pilot-Scale Enhanced Reductive Dechlorination Using Lactate Injection for TCE Remediation, The Fifth International In-Situ and On-Site Bioremediation Symposium, Battelle, Monterey, CA May 22-25, 2006

Rahman, K., Maley, M., and Javaherian, M., 2004. Integrated Hydrogeologic Characterization for Improved TCE Remediation. The Fourth International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Battelle, Monterey, CA, May 24-27.

Maley, M., P. Leffler, P. Sorensen, M. Javaherian, and M. Pinto 2003, Water Balance and MODFLOW Simulations for Cummings Basin, Kern County, California: 24th Biennial Groundwater Conference/GRA Annual Meeting, October 2003, Ontario, CA.

Javaherian, M.M., 2003. Toxicological Effects of Sulfur, National Seminar on the Production and Consumption of Sulfur, Iran Association of Chemical Engineers, Mashhad, Iran, March.

Javaherian, M.M., 2001. Software Applications in Management of Air Quality, Groundwater Quality, and Design of Remediation Systems, 2001 Conference on Technology & Urban Development, Isfahan University of Technology, Isfahan, Iran, June 18-21, 2001.

Priestaf, I., M.M. Javaherian, and P. Leffler, 1999. Evaluation of Salt Loading on Downstream Artificial Recharge, Alameda Creek Watershed, CA, The 9th Biennial Symposium on the Artificial Recharge of Groundwater, Tempe, AZ.

Javaherian, M.M., 1996. A Moving Finite Element Model for One-Dimensional Flow in Unsaturated Soils. *Int. J. Num. Anal.*, 4(5).

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Ulrick, J.S.D., and M.M. Javaherian, 1995. Use of Kriging in Spatial Characterization for Simulation of Groundwater Flow. 1995 Annual Meeting of the Association of Engineering Geologists and Groundwater Resource Association of California.

Javaherian, M.M., 1994. Misapplication of the Millington Model to Gas Diffusion in EPA's VLEACH Model. Submitted to: Robert S. Kerr Environmental Research Laboratory, Ada Oklahoma.

Javaherian, M.M., 1993. FILTER: An Analytical Solution for Simulation of Chemical Transport in Unsaturated Soils. *J. Adv. Math & En g.* 3(5).

ERIC ZICKLER
Water Resource Engineer

EXPERTISE

Hydrology and Hydraulic Engineering
Soil and Groundwater Investigations
GIS and Database Management

Project Engineering
Remediation Engineering
Data Evaluation

EXPERIENCE

Over 3 years of experience in environmental, geotechnical, and water resources projects, with particular expertise in groundwater resource engineering, environmental compliance, and advanced water treatment technologies.

Project Engineering – Responsibilities include and performing technical work, managing project related tasks, point-of-contact for clients and teaming partners, and engineering support for groundwater remediation systems.

Water Resources – At ETIC, Mr. Zickler has worked as a water resource engineer for a groundwater and surface water modeling project in Los Angeles County in California. Responsibilities include overseeing and performing technical work, data collection, technical analysis of site conditions, dilution and attenuation of potential contaminants, and point-of-contact for teaming partners. He has experience with computer models using MODFLOW and HEC-RAS to evaluate yield and impact of water quality issues on sustainable yield for groundwater basins. Assessment of sustainable yields in water supply wells through field pump testing and numerical modeling of aquifer characteristics. Experience with the implementation of GIS databases and computer mapping software to perform large-scale water quality analysis.

Soil and Groundwater Investigations and Remediation – Investigation of petroleum hydrocarbon and other chemical releases at industrial and commercial facilities. Responsible for site assessment, investigation work plans, corrective action plans, and the design of groundwater and vapor extraction systems for site remediation. Engineering oversight for dual-phase and liquid phase subsurface extraction system for petroleum impacted sites. Mr. Zickler has used of a variety of numerical modeling techniques for assessing groundwater and vapor extraction capture zones and contaminant removal efficiencies.

Representative Water Resources Project Experience – In the Montebello Forebay of the Central Basin and the Lower San Gabriel Basin of Los Angeles County, performed data collection and data evaluation as part of a team responsible for evaluating the attenuation and degradation of potential water quality constituents in a complex basin system incorporating artificial groundwater recharge and site hydrology. Data collection to be used in the development of a numerical model using FEFLOW.

EDUCATION

M.S., Civil and Environmental Engineering, California Polytechnic State University, 2004
B.S., Civil Engineering, Colorado State University, 1998

Mr. Eric Zickler
Page 1 of 2



REGISTRATIONS AND CERTIFICATIONS

Engineer in Training – Civil 1997

PROFESSIONAL AFFILIATIONS

Member American Society of Civil Engineers
Member American Chemical Society

TRAINING

Certified OSHA 40-Hour Hazardous Waste Operations and Emergency Response Training
CPN (Nuclear Density Gauge) 4/2002; ACI (American Concrete Institute) 7/2000

Mr. Eric Zickler
Page 2 of 2

ATTACHMENT 2

COMMENTS

on

DRAFT ENVIRONMENTAL IMPACT REPORT

SANTA CLARA GARDENS DEVELOPMENT PROJECT
City of Santa Clara
California

April 21, 2006

Submitted by

Peter A. Christensen
Air Quality Specialist
4524 Wyman Drive
Sacramento CA 95821

Section 1: Introduction

The Draft Environmental Impact Report for the Santa Clara Gardens Development Project (DEIR) has been prepared for the City of Santa Clara, California. The 17 acre project is located in the City of Santa Clara, part of the San Francisco Bay Area Air Basin. The proposed project would develop land formerly used for agricultural research into 165 senior housing units, 110 single family homes, and a one-acre city park. The project area is immediately bordered by existing residential development.

8-92

Section 2: Construction Emissions

The DEIR states that exhaust emissions from construction projects “are included in the emission inventory that is the basis for regional air quality plans...” (DEIR, 4-30). The DEIR concludes that emissions from construction are less than significant because “applicants have agreed to implement all feasible BAAQMD-recommended control measures for construction-generated PM₁₀ emissions.” This conclusion is flawed for at least two reasons:

8-93

First, construction emissions of PM, ROG, and NO_x are not quantified in the DEIR and therefore can not be compared with significance thresholds. The apparent presumption is that emissions included in an emission inventory need not be analyzed. The presumption is clearly inconsistent with CEQA requirements, and is inconsistent with other sections of the DEIR, such as the analysis of operational emissions, where emissions are quantified despite the fact that light duty vehicle emissions are included in the emission inventory. Virtually every emission control program at the federal, state, and local level is designed to reduce emissions that are documented in an emissions inventory. Therefore, construction exhaust emissions are a critical component of the overall emissions impact of the proposed project, and must be analyzed and mitigated to the extent feasible.

8-94

Second, PM mitigation measures recommended by the Bay Area Air Quality Management District (BAAQMD) have not been included as mitigation measures in the DEIR. The “agreement” on the part of project applicants to implement “control measures” does not relieve the lead agency from identifying and requiring all feasible mitigation measures. This is a significant failure of the DEIR because mitigation measures must be enforceable, and a simple “agreement” to implement an undefined set of “control measures” is not enforceable. Furthermore, mitigation of ROG and NO_x emissions from construction equipment exhaust, as recommended by the BAAQMD, has not been included in the DEIR.

8-95

Although the BAAQMD has not established a specific threshold of significance for construction emissions, several options are available to the lead agency for establishing a threshold of significance. The significance of construction emissions is commonly evaluated throughout California by estimating emissions with the URBEMIS 2002 v8.7 model. Modeled construction impacts can be compared with BAAQMD operational emissions thresholds. Because the health and attainment implications of ROG, NO_x, and PM are not dependent on the source of the emission, it is appropriate to compare

8-96

construction emissions with operational thresholds. Alternatively, project emissions can be compared to construction emission thresholds adopted by other California air districts.

8-96
Cont'd

Specifically, the URBEMIS model can estimate construction related emissions of reactive organic gases (ROG) and oxides of nitrogen (NOx), as well as PM emissions from diesel exhaust, fugitive PM, carbon monoxide, and other pollutants. Individual construction phase results are provided for demolition, grading, and building construction.

8-97

The Appendix to this letter provides a detailed URBEMIS analysis of construction exhaust emissions for the project. Model inputs were based on construction activity described in the DEIR. The analysis demonstrates that construction activities result in significant ROG and NOx impacts when compared with BAAQMD operational significance thresholds of 80 pounds per day (ppd) of ROG or NOx, and the South Coast Air Quality Management District construction thresholds of 100 ppd of NOx or 75 ppd of ROG. The significant impacts associated with construction of the Santa Clara Gardens Development Project include:

8-98

- building demolition results in 170 ppd of NOx;
- site grading results in 281 ppd of NOx and 166 ppd of PM₁₀;
- building construction during 2006 results in 544 ppd of NOx;
- building construction during 2007 results in 520 ppd of NOx;
- building construction during 2008 (including architectural coatings) results in 660 ppd of ROG and 523 ppd of NOx.

The impacts listed above significantly exceed the thresholds of both the BAAQMD and SCAQMD. This is an important impact because of the proximity of existing residential uses adjacent to the site. Therefore, the DEIR should be revised to disclose the significant construction impacts and should be recirculated to provide the public with an opportunity for review (Impact 4.3-1).

8-99

Section 3: Construction Mitigation

Because construction impacts are significant, several feasible mitigation measures exist and should be required to reduce emissions of ROG, NOx, and PM. The BAAQMD CEQA Guidelines recommend that projects which may result in public exposure to high levels of diesel exhaust implement the following mitigation¹:

- Conversion to cleaner engines.
- Use of cleaner (reduced sulfur) fuel.
- Regular maintenance – keep equipment well tuned.
- Reduce idling.
- Add-on control devices, e.g. particulate traps, catalytic oxidizers.

8-100

¹ Bay Area Air Quality Management District (BAAQMD), BAAQMD CEQA Guidelines, December 1999, p. 60.

- Buffer zone between facility and sensitive receptors.

8-100
Cont'd

All of the mitigation identified above is feasible for the project. Specifically, “conversion to cleaner engines” could include the preferential use of newer construction equipment. Newer off-road diesel powered construction equipment which meet progressively stringent state standards can dramatically reduce exhaust emissions of NOx and PM.

8-101

Several diesel engine retrofit devices are now available to reduce emissions from heavy-duty diesel powered construction equipment. Retrofit options include:

- Diesel oxidation catalysts (DOC)
- Diesel particulate filter (DPF)
- Selective catalytic reduction (SCR)
- Lean NOx catalysts combined with DPF

8-102

Diesel oxidation catalysts are available now from multiple manufacturers and provide emission reductions verified by the California Air Resources Board (CARB). Installation of DOCs on construction equipment can provide a 20 percent reduction in NOx emissions and 50 percent reduction in PM emissions². Diesel particulate filters are available now from multiple manufacturers and provide at least 85 percent reduction in particulate emissions³. Selective catalytic reduction technology is available for certain diesel engine types and provides an 80 percent reduction in NOx and 25 percent reduction in PM⁴. The combination of a lean NOx catalyst and diesel particulate filter provides the opportunity to reduce NOx emissions by 25 percent at PM emissions by at least 85 percent⁵.

The BAAQMD recommends several mitigation measures specifically designed to reduce fugitive PM. Basic mitigation is recommended for small construction sites. Additional mitigation is recommended for projects over four acres, and maximum mitigation is “strongly recommended” for projects located near sensitive receptors (BAAQMD, p.15). Because sensitive receptors (residential units) are located adjacent to the project, all of the following mitigation must be included in the DEIR to be consistent with BAAQMD guidance:

8-103

- Water all active construction areas at least twice daily.
- Cover all trucks hauling soil, sand, and other loose materials *or* require all trucks to maintain at least two feet of freeboard.
- Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.

² http://www.arb.ca.gov/diesel/verdev/level2/eo_de04007.pdf

³ <http://www.arb.ca.gov/diesel/verdev/level3/level3.htm>

⁴ <http://www.arb.ca.gov/diesel/verdev/level2/level2.htm>

⁵ <http://www.cleaire.com/site/products/index.html#>

- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
- Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).
- Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.)
- Limit traffic speeds on unpaved roads to 15 mph.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.
- Install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site.
- Install wind breaks, or plant trees/vegetative wind breaks at windward side(s) of construction areas.
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph.
- Limit the area subject to excavation, grading and other construction activity at any one time.

8-103
Cont'd

The DEIR should be revised to include the construction exhaust and fugitive dust mitigation measures identified above and should be recirculated for public review.

8-104

Section 4: Diesel Particulate Matter Health Risk Assessment

In addition to fugitive dust, diesel exhaust is a primary source of particulate matter. The California Air Resources Board (CARB) has identified particulate emissions from diesel exhaust as a toxic air contaminant (TAC), as the DEIR acknowledges. TACs are a major public health issue in California, and the potential health impacts prompted CARB to develop the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (RRP) in October 2000. The RRP found that near-source exposures to diesel PM can result in elevated exposures to sensitive receptors, resulting in the potential for up to 1,500 cancer cases per million.⁶

8-105

The BAAQMD CEQA Guidelines also address the importance of evaluating the potential risk from diesel exhaust particulates:

Because of the potential public health impacts, however, the District strongly encourages Lead Agencies to consider the issue and address potential impacts based on the best information available at the time the analysis is prepared. Particular attention should be paid to projects that might result in sensitive receptors being exposed to high levels of diesel exhaust. This applies to situations where a new

8-106

⁶ California Air Resources Board, Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, October 2000, p. 1.

or modified source of emissions is proposed near existing receptors and to new receptors locating near an existing source⁷.

8-106
Cont'd

Of particular importance in assessing potential health impacts caused by diesel particulate matter is the location of adjacent residential sensitive receptors. In the aerial photograph shown in Exhibit 3-3 of the DEIR, residential uses can be seen on three of the four sides of the project.

8-107

Despite the documented health concerns related to diesel particulate matter, the DEIR concludes that TAC impacts are less than significant (Impact 4.3-4). This conclusion is not based on an analysis, but on assumptions that construction is temporary and that PM has “dispersive properties.” These assumptions do not substantiate a determination of less than significant. The duration of exposure and dispersion of the particulates are fundamental components of a concentration analysis and health risk assessment. Therefore, the DEIR should be revised to include a particulate matter concentration analysis and an estimate of potential excess cancer risk and acute health risks. Concentration analyses are routinely included in EIRs, and most analysts use the U.S. EPA Industrial Source Complex Short Term model (ISC model). The excess cancer risk and acute health risks caused by diesel particulate matter during construction activities to maximally impacted sensitive receptors should be evaluated and disclosed in the DEIR (Impact 4.3-4).

8-108

Section 5: Operational Emissions Analysis

Table 4-3 of the DEIR presents the results of operational emissions estimates determined by the URBEMIS 2002 v8.7 model. The actual URBEMIS outputs are contained in Appendix B of the DEIR. However, it should be noted that Appendix B does not include an essential component of the standard URBEMIS output: changes made to default values. Without disclosing changes made by the DEIR preparers to default values, the accuracy of the data can not be confirmed.

8-109

Based on a review of the model outputs in Appendix B, the DEIR URBEMIS analysis underestimates the potential operational impacts by failing to consider area sources. Operational emissions include both mobile sources and area sources. The DEIR analysis includes mobile (vehicular) emissions but does not quantify any area sources. This results in a significant underestimation of emissions. Area sources include natural gas use, fireplaces, landscaping equipment, consumer products, and architectural coatings. Clearly, the project will include all of these emission sources and therefore must be quantified to disclose the total project impacts. The URBEMIS model results in the Appendix to this letter include quantification of area sources. As shown in the table below, the combination of area source and vehicular source operational emissions results in a significant ROG impact that was not disclosed in the DEIR.

8-110

⁷ BAAQMD, BAAQMD CEQA Guidelines, p. 47.

Operational Emissions (lbs/day)			
	<i>ROG</i>	<i>NOx</i>	<i>PM₁₀</i>
DEIR Table 4-3 (vehicle only)	23.36	33.63	21.13
Exceed Threshold	No	No	No
Revised Complete Analysis (vehicle plus area)	209.06	42.80	65.24
Exceed Threshold	YES	No	No

8-110
Cont'd

The incomplete estimation of operational impacts in the DEIR results in the failure to disclose a significant impact, and must be corrected (Impact 4.3-3).

Section 6: Operational Mitigation

Because of the underestimation of operational impacts, the DEIR fails to identify feasible mitigation measures recommended by BAAQMD. The BAAQMD CEQA Guidelines contain 25 mitigation measures with 77 supporting measures to enhance effectiveness (BAAQMD, p. 61-66). The recommended mitigation includes measures to reduce vehicle trips, reduce vehicle miles traveled, encourage the use of low emission vehicles, improve traffic flows and reduce congestion. The DEIR should evaluate the feasibility of each of these measures, include feasible mitigation, and document specific reasons that any recommended mitigation is not feasible for this project.

8-111

Examples of additional effective, feasible mitigation that should be included in the DEIR include, but are not limited to:

- Plant shade trees in parking lots to reduce evaporative emissions
- Plant shade trees along southern exposures of buildings to reduce summer cooling needs
- Install only Energy Star rated appliances
- Install only Energy Star rated roofing materials in non-residential buildings
- Require residential uses to achieve a 25 percent improvement in Title 24 energy efficiency standards in effect at the time of building permit
- Require non-residential buildings to achieve a 15 percent improvement in Title 24 energy efficiency standards in effect at the time of building permit
- Installation of ozone destruction catalysts on residential air conditioning systems to reduce ambient outdoor ozone concentrations;
- Use pervious concrete, traditional concrete, or reflective surfaces instead of blacktop on parking lots and streets to reduce surface temperatures and reduce evaporative ROG emissions;
- Provide electric lawn and garden equipment directly to new homeowners to reduce yard maintenance emissions;
- Contribute to an off-site emission reduction fund to reduce unmitigated project emissions.

8-112

The DEIR must be revised to include these and any other identified feasible operational mitigation measures.

8-113

Appendix

URBEMIS 2002 v8.7 Modeling Results

Santa Clara Gardens Development Project

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URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Santa Clara
 Gardens.urb
 Project Name: Santa Clara Gardens Worst Case Analysis
 Project Location: San Francisco Bay Area
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
 (Pounds/Day - Winter)

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2006 ***							
TOTALS (lbs/day,unmitigated)	71.49	543.88	529.56	2.30	177.39	24.55	152.84
*** 2007 ***							
TOTALS (lbs/day,unmitigated)	71.40	520.05	545.54	0.00	22.67	22.45	0.22
*** 2008 ***							
TOTALS (lbs/day,unmitigated)	659.44	522.59	610.52	0.00	21.58	21.13	0.45

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	185.70	9.17	297.40	0.70	44.11

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	23.36	33.63	258.19	0.12	21.13

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	209.06	42.80	555.59	0.83	65.24

Page: 2

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URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Santa Clara
 Gardens.urb
 Project Name: Santa Clara Gardens Worst Case Analysis
 Project Location: San Francisco Bay Area
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
 (Pounds/Day - Winter)

Construction Start Month and Year: June, 2006
 Construction Duration: 24
 Total Land Use Area to be Developed: 16 acres
 Maximum Acreage Disturbed Per Day: 4 acres
 Single Family Units: 285 Multi-Family Units: 0
 Retail/Office/Institutional/Industrial Square Footage: 0

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2006***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	42.00	-	42.00
Off-Road Diesel	5.01	37.50	37.55	-	1.65	1.65	0.00
On-Road Diesel	9.03	132.46	33.72	2.30	4.47	3.88	0.59

Worker Trips	0.04	0.05	0.88	0.00	0.00	0.00	0.00
Maximum lbs/day	14.08	170.01	72.15	2.30	48.12	5.53	42.59

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	152.80	-	152.80
Off-Road Diesel	34.45	275.64	245.32	-	12.75	12.75	0.00
On-Road Diesel	0.37	5.42	1.38	0.09	0.18	0.16	0.02
Worker Trips	0.12	0.05	1.37	0.00	0.02	0.00	0.02
Maximum lbs/day	34.94	281.11	248.07	0.09	165.75	12.91	152.84

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	70.15	543.08	512.50	-	24.54	24.54	0.00
Bldg Const Worker Trips	1.34	0.81	17.06	0.00	0.23	0.01	0.22
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	71.49	543.88	529.56	0.00	24.77	24.55	0.22

Max lbs/day all phases	71.49	543.88	529.56	2.30	177.39	24.55	152.84
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*** 2007***

Phase 1 - Demolition Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	70.15	519.29	529.50	-	22.43	22.43	0.00
Bldg Const Worker Trips	1.25	0.76	16.04	0.00	0.23	0.01	0.22
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	71.40	520.05	545.54	0.00	22.67	22.45	0.22

Max lbs/day all phases	71.40	520.05	545.54	0.00	22.67	22.45	0.22
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*** 2008***

Page: 3
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Phase 1 - Demolition Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 2 - Site Grading Emissions

Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase 3 - Building Construction

Bldg Const Off-Road Diesel	70.15	495.51	545.89	-	20.33	20.33	0.00
Bldg Const Worker Trips	1.15	0.71	14.95	0.00	0.23	0.01	0.22
Arch Coatings Off-Gas	582.37	-	-	-	-	-	-
Arch Coatings Worker Trips	1.15	0.71	14.95	0.00	0.23	0.01	0.22
Asphalt Off-Gas	0.48	-	-	-	-	-	-

Asphalt Off-Road Diesel	4.00	23.58	33.99	-	0.73	0.73	0.00
Asphalt On-Road Diesel	0.12	2.07	0.45	0.00	0.05	0.05	0.00
Asphalt Worker Trips	0.02	0.01	0.29	0.00	0.00	0.00	0.00
Maximum lbs/day	659.44	522.59	610.52	0.00	21.58	21.13	0.45
Max lbs/day all phases	659.44	522.59	610.52	0.00	21.58	21.13	0.45

Phase 1 - Demolition Assumptions
Start Month/Year for Phase 1: Jun '06
Phase 1 Duration: 1.2 months
Building Volume Total (cubic feet): 100000
Building Volume Daily (cubic feet): 100000
On-Road Truck Travel (VMT): 5556
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Rubber Tired Dozers	352	0.590	8.0
1	Rubber Tired Loaders	165	0.465	8.0

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jul '06
Phase 2 Duration: 2.4 months
On-Road Truck Travel (VMT): 228
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
8	Rubber Tired Dozers	352	0.590	8.0
8	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Sep '06
Phase 3 Duration: 20.4 months
Start Month/Year for SubPhase Building: Sep '06
SubPhase Building Duration: 20.4 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
12	Concrete/Industrial saws	84	0.730	8.0
23	Other Equipment	190	0.620	8.0
12	Rough Terrain Forklifts	94	0.475	8.0

Start Month/Year for SubPhase Architectural Coatings: Apr '08
SubPhase Architectural Coatings Duration: 2 months
Start Month/Year for SubPhase Asphalt: May '08
SubPhase Asphalt Duration: 1 months
Acres to be Paved: 4
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
1	Pavers	132	0.590	8.0
1	Rollers	114	0.430	8.0

Page: 4
04/15/2006 3:46 PM

AREA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.28	3.57	1.52	0	0.01
Hearth	161.77	5.60	295.88	0.70	44.11
Landscaping - No winter emissions					
Consumer Prdcts	13.94	-	-	-	-
Architectural Coatings	9.71	-	-	-	-
TOTALS (lbs/day, unmitigated)	185.70	9.17	297.40	0.70	44.11

Page: 5
04/15/2006 3:46 PM

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	13.28	19.11	146.72	0.07	12.01
Retirement community	10.07	14.50	111.33	0.05	9.11
City park	0.01	0.02	0.13	0.00	0.01

TOTAL EMISSIONS (lbs/day) 23.36 33.63 258.19 0.12 21.13

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2007 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	10.00	10.22 trips/dwelling unit	120.00	1,226.40
Retirement community	6.00	5.64 trips/dwelling unit	165.00	930.60
City park		1.59 trips/acres	1.00	1.59
Sum of Total Trips				2,158.59
Total Vehicle Miles Traveled				13,864.14

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.20	1.80	97.80	0.40
Light Truck < 3,750 lbs	15.10	3.30	94.00	2.70
Light Truck 3,751- 5,750	16.10	1.90	96.90	1.20
Med Truck 5,751- 8,500	7.10	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.10	0.00	0.00	100.00
Motorcycle	1.70	82.40	17.60	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home- Work	Home- Shop	Home- Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	27.3	21.2	51.5			
% of Trips - Commercial (by land use)						
City park				5.0	2.5	92.5

Page: 6
04/15/2006 3:46 PM

Changes made to the default values for Land Use Trip Percentages

The Trip Rate and/or Acreage values for Single family housing
have changed from the defaults 9.57/40. to 10.22/10
The Trip Rate and/or Acreage values for Retirement community
have changed from the defaults 3.71/33. to 5.64/6

Changes made to the default values for Construction

Site Grading Fugitive Dust Emission Rate changed from 10 to 38.2

Changes made to the default values for Area

Changes made to the default values for Operations

The operational emission year changed from 2005 to 2007.

Peter A. Christensen

4524 Wyman Drive • Sacramento CA 95821
p 916.730.4063 • peter@typestyler.com

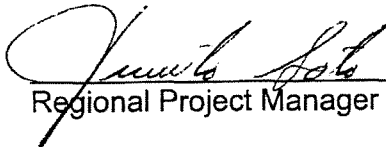
General	Specialist in quantitative analysis of air quality impacts from land use and transportation projects.
Experience	Over 13 years of experience as an air quality analyst with the Sacramento Metropolitan Air Quality Management District
Skills	<ul style="list-style-type: none">• Extensive knowledge of California Environmental Quality Act• Urban land use emissions modeling using URBEMIS• On-road vehicle emissions analysis using EMFAC• Off-road equipment emissions analysis using CARB off-road model• Roadway construction emissions analysis• Certified visual emission evaluator
Education	University of California, Davis Environmental Planning & Management
Relevant Interests	Arden Arcade Community Planning Advisory Council, Chairman (2005) Statewide URBEMIS Working Group, Member

ATTACHMENT 3

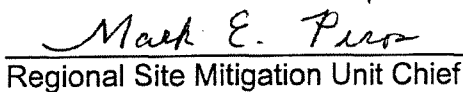
**REMOVAL ACTION CERTIFICATION
BORELLO PROPERTY
COCHRAN/PEET ROADS
MORGAN HILL, SANTA CLARA COUNTY, CALIFORNIA**

1. Certification of Remedial or Removal Action:

I hereby certify that the following information is true and correct to the best of my knowledge.


Regional Project Manager

09/22/2005
Date


Regional Site Mitigation Unit Chief

09/22/05
Date


Regional Site Mitigation Branch Chief

10/12/05
Date

2. Certification Statement: Based upon the information which is currently and actually known to the Department of Toxic Substances Control (DTSC),

☒ DTSC has determined that all appropriate response actions have been completed, that all acceptable engineering practices were implemented and that no further removal/remedial action is necessary.

☐ DTSC has determined, based upon a remedial investigation or site characterization that the site poses no significant threat to public health, welfare or the environment and therefore implementation of removal/remedial measures is not necessary.

☐ DTSC has determined that all appropriate removal/remedial actions have been completed and that all acceptable engineering practices were implemented; however, the site requires ongoing operation and maintenance (O&M) and monitoring efforts. The site will be deleted from the "active" site list following (1) a trial operation and maintenance period and (2) execution of a formal written settlement between DTSC and the responsible parties, if appropriate. However, the site will be placed on DTSC's list of sites undergoing O&M to ensure proper monitoring of long-term clean-up efforts.

3. Site Name and Location:

Billo Property
Cochran and Peet Roads
Morgan Hill, Santa Clara County, California 95037

A. List any other names that have been used to identify sites:

B. Address of site if different from above:

C. Assessor's Parcel Numbers: 728-34-3

4. Responsible Party:

Cochran Road Farms
P.O. Box 2107
Morgan Hill, California 95038

Relationship to Site: Current Property Owner

5. Brief Description and History of the Site:

Physical Description. The Borello Property (Site) is a 14-acre vacant lot with no buildings, which was recently zoned for residential use. The Site is in a mainly agricultural area in the eastern portion of Morgan Hill. The Site fronts Peet Road near Cochran Road. The local topography is approximately 410 feet above mean sea level (msl) on the eastern portion of the Site, and slopes down to 400 feet above msl on the western portion of the Site. Coyote Creek is located immediately north of the Site, across Cochran Road, and flows toward the northwest. Drainage at the Site appears to be toward the west-southwest, along local topography.

Site History. The Site has been used for agricultural purposes for more than 40 years. Recent soil sampling analytical results showed organochlorine pesticides have impacted the surface soil across the entire Site.

6. Type of Site:

Is the Site included in the Bond Expenditure Plan?

Yes ☐ No ☒

RCRA-Permitted Facility	<input type="checkbox"/>	Bond-funded	<input type="checkbox"/>
RCRA Facility Closure	<input type="checkbox"/>	RP-Funded	<input type="checkbox"/>
NPL	<input type="checkbox"/>	Federal Facility	<input type="checkbox"/>

Other (i.e. walk-in) ☒ Explain Briefly:

Voluntary Cleanup Agreement (VCA) to investigate and cleanup the Site.

7. Size of the Site:

Small ☒ Medium ☐ Large ☐ Extra-Large ☐

8. Dates of Remedial Action:

a. Initiated: June 2005 b. Completed: August 2005

9. Response Action Taken on Site: (check appropriate action)

☐ Initial removal or Remedial Action (site inspection/sampling)

☒ Final Removal Action

☐ RCRA enforcement/closure action

☐ No action, further investigation verified that no clean-up action at the site was need.

A. Type of Removal Action: (e.g. excavation and disposal, on-site treatment, etc.)

The project involved bioremediation of the dieldrin- and toxaphene-impacted soil to residential cleanup levels by amending the top 18-inches of soil at the Site. Based on results of an onsite treatability study, gene expression factor (GEF) and approximately three tons of cow manure, one ton of lime, 4,200 gallons of 34-0-0 fertilizer were mixed into the impacted soil to enhance bacterial growth. About one month after the soil amendments were added, the GEF was evenly spread over the entire property and mixed to a depth of approximately 18-inches. The property was irrigated at least four-time a week. After the GEF has been in the soil for approximately one month, soil samples were collected to confirm that the remaining soil dieldrin and toxaphene concentrations were below the cleanup levels. Analytical results reported a dieldrin concentration, in only one soil sample, above the site-specific cleanup goal of 25 micrograms per kilogram ($\mu\text{g/Kg}$). The site averaged dieldrin concentration at 0.5-foot is 3.54 $\mu\text{g/Kg}$, well below the Site residential cleanup level. Also analytical results reported a concentration of toxaphene at 130 $\mu\text{g/Kg}$, which is below the residential cleanup level of 400 $\mu\text{g/Kg}$. Bacterial populations within the soil at the subject site are within background levels. The total estimated quantity of pesticide-impacted soil that was bioremediated is approximately 14,200 cubic yards or 10,500 tons. Groundwater underneath the Site has not been impacted. The total area

remediated to residential standards is approximately 14 acres.

B. Estimated quantity of waste associated with the site (i.e., tons/gallons/cubic yards) which was:

- | | |
|---------------------------------------|-----------------------------------|
| 1. <u>x</u> treated | amount: <u>14,200 cubic yards</u> |
| 2. <u> </u> untreated (capped sites) | amount: |
| 3. <u> </u> removed | amount: |

10. Cleanup Levels/Standards:

- a. What were the cleanup standards established by DTSC pursuant to the final remedial action plan (RAP) or workplan (if cleanup occurred as the result of removal action (RA) or interim remedial measures (IRM) prior to development of a RAP?

Toxaphene 400 µg/Kg for residential land use

Dieldrin 25 µg/Kg for residential land use

- b. Were the specified cleanup standards met? yes x no

- c. If "no", why not:

11. DTSC Involvement in the Removal Action:

A. Did the Department order the Removal Action?

Yes x No Date of Order June 1, 2004 (VCA)

B. Did the Department review and approve (check appropriate action and indicate date of review/approval, if done):

Sampling Analysis Procedures Date March 2004

Health & Safety Protection Date June 2005

Removal/Disposal Procedures Date June 2005

Removal Action Workplan Date June 2005

C. If site was abated by responsible party, did the Department receive a signed statement from a licensed professional on all Remedial Actions?

Design and Construction Specifications Date June 2005

Post Construction Date August 2005

D. Did a registered engineer or geologist verify that acceptable engineering practices were implemented?

Yes x No Name: Robert D. Campbell

E. Did the Department confirm completion of all Removal Action?

Yes x No Date August 2005

F. Did the Department (directly or through a contractor) actually perform the Removal Action?

Yes No x Name of Contractor

G. Was there a community relations plan in place?

Yes x No

H. Was a removal action plan developed for this site?

Yes x No

I. Did DTSC hold a public meeting regarding the draft RAW?

Yes No x

J. Were public comments addressed?

Yes x No

Date of DTSC analysis/response June 2005

K. Are all of the facts cited above adequately documented in the DTSC files?

Yes x No

If no, identify areas where documentation is lacking

12. EPA Involvement in the Removal Action;

A. Was EPA involved in the site cleanup?

Yes ___ No x

B. If yes, did EPA concur with all removal actions?

Yes ___ No ___

C. EPA comments

EPA staff involved in cleanup: (name, title, address, and phone number)

13. Other Regulatory Agency Involvement in the Cleanup Action:

Agency:

Activity:

___ RWQCB

___ AQMD

___ CHP

___ Caltrans

___ Other

Name of contact persons and agency: _____

14. Post Closure Activity:

**A. Will there be post-closure activities at this site?
(e.g. Operation and Maintenance)**

Yes ___ No x

If yes, describe:

B. Have post-closure plans been prepared and approved by the Department?

Yes ___ No x

C. What is the estimated duration of post-closure (including Operation and Maintenance) activities?

___ years.

D. Are deed restriction proposed or in place?

Yes ___ No x

If "yes", have deed restrictions been recorded with the County recorder?

Yes ___ No ___

If "no", who is responsible for assuring that the deed restrictions are recorded?

Who is the Division contact? Jacinto Soto/(510) 540-3842
name/phone and number

E. Has cost recovery been initiated?

Yes x No

If "yes", amount received \$ 9,017.77 of DTSC costs.

F. Were local planning agencies notified of the cleanup action?

Yes ___ No x

If "yes", the name and address of the agency:

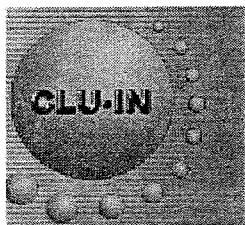
15. Expenditure of Funds and Sources:
(Information to be supplied by Toxic Account Unit.)

funding source and amount expended:

___ HWCA	\$ ___	___ HSA	\$
___ HSCF	\$ ___	___ RCRA	\$
<u>x</u> RP	\$ ___	___ Other	\$
___ Federal Cooperation Agreement			\$

16. **Problems Encountered Which Caused Major Delays:** No problems were encountered.
17. **Accomplishments Unique to this Project:** The 14-acres former apricot and cherry orchard has been cleaned up to residential standards at relatively low cost and short period of time by applying a bio-engineered protein called "factor" to bio-remediate the pesticide-impacted soil beneath the site.
18. **Final Use of Site:** The Site will be developed for residential use.

ATTACHMENT 4



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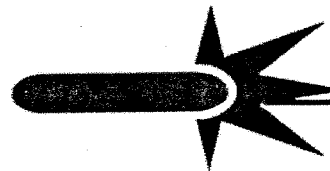
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EPA

TECH TRENDS



August 2000

Cometabolic Bioventing Field Test Conducted at Dover Air Force Base

by Gregory Sayles, Ph.D., EPA/National Risk Management Research Laboratory

Under stewardship of EPA's government/industry collaboration, the Remediation Technologies Development Forum (RTDF) Bioremediation Consortium, a cometabolic bioventing demonstration was conducted during 1998-1999 at Dover Air Force Base in Dover, DE. Results of the demonstration have shown that 99% of the chlorinated organic contamination was removed through cometabolic bioventing. RTDF researchers are continuing to compile and disseminate information on the lessons learned during this demonstration, and to conduct similar testing at Hill Air Force Base in northern Utah.

Cometabolic bioventing is the injection of air and a cosubstrate into the vadose zone to promote *in situ* biodegradation of chlorinated solvents. Although the use of cometabolism for ground water treatment has been studied in the field for several years, the RTDF study is the first known field test of cometabolic bioventing.

The demonstration occurred adjacent to a jet engine maintenance area (Building 719) contaminated with trichloroethylene (TCE), 1,1,1-trichloroethane (TCA), and 1,2-*cis* dichloroethylene (DCE). Early laboratory tests using soil from this location showed that propane and toluene each performed well as cosubstrates, and propane was chosen for the demonstration. Testing indicated that 30 moles of

propane were required to promote biodegradation of one mole of TCE.

The field system consisted of three injection wells screened to 10 feet below ground surface, which was the lowest expected elevation of the water table. Thirteen soil gas monitoring points, each of which were equipped with two gas probes, also were installed to monitor soil gas conditions throughout the demonstration. An additional 11 temporary soil gas monitoring points were installed for use during initial air permeability testing and for soil gas monitoring during operation of the system. Operation began with pulsed injection of propane in air over a three-month period in order to acclimate the microbial environment of the 600 square-foot test plot. Over the following 14 months, continuous injection of 0.03% (v/v) propane in air was applied at a rate of 1.0 feet³/minute.

Statistical analysis showed that TCE, TCA and DCE were removed significantly during the test, with most final concentrations reaching below the detection limit of 6 µg/kg. As a product of chlorinated solvent biodegradation, deposition of chloride was used to demonstrate overall contaminant biodegradation. Chloride ion was found to accumulate at a median rate of 58 mg/kg of soil, for a total chloride accumulation rate of 10 times the initial amount present at the test plot. Based on these rates, it is estimated that a total of 13 kg of chlorinated solvents (in TCA equivalents) biodegraded as a result of the cometabolic bioventing process. Figure 1 provides histograms of the initial and final TCE and chloride concentrations during the demonstration.

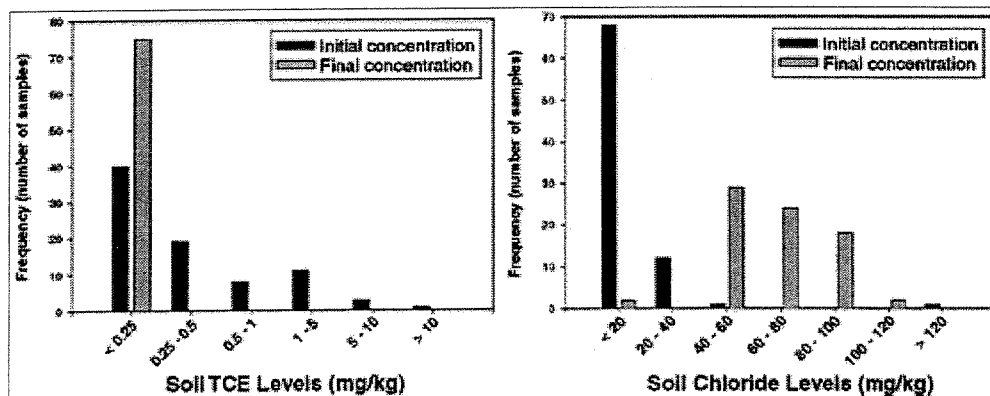


Figure 1. Histograms of Initial and Final TCE and Chloride Concentrations

Researchers found that an initial cosubstrate acclimation period prior to full operation of the system is required for effective use of propane as a cosubstrate during the bioventing process. It was also recognized that reliance on the use of indirect measures of biodegradation (such as chloride accumulation) rather than direct measures highlights the need for innovative approaches to proving that biodegradation occurs in the field.

Although detailed costing of this technology is not yet available,

aerobic bioventing of fuel contamination typically costs \$5-25/yard³. Cometabolic bioventing incurs additional costs for elements such as the cosubstrate and additional monitoring, but these expenses are expected to be less than \$10/yard³.

Dover Air Force Base is considering full-scale application of this technology to complete vadose-zone remediation at Building 719. Visit the RTDF Web site at www.rtdf.org for more information, or contact Dr. Gregory Sayles (EPA/National Risk Management Research Laboratory) at 513-569-7607 or e-mail sayles.gregory@epa.gov.

Anaerobic/Aerobic Composting for Removal of Pesticide Contaminants

by Brad Jackson, EPA/Region 4, and Frank Peter, Stauffer Management Company

Field demonstration of a unique composting process was completed recently at the Stauffer Management Company (SMC) Superfund site in Tampa, FL. This process, known as Xenorem™, uses anaerobic and aerobic cycles to bioremediate pesticide-contaminated soil via indigenous bacteria and the addition of amendments. The demonstration resulted in an overall destruction rate of 90% for all contaminants of concern (chlordane, DDD, DDE, DDT, dieldrin, toxaphene, and molinate). Based on these results, this technology now is being used to remediate approximately 16,000 cubic yards of soil at the SMC Tampa site and in other full-scale commercial applications.

The field demonstration was conducted in an enclosed warehouse at the SMC Tampa manufacturing facility using soil taken from two areas with high concentrations of pesticides. Preparation for the tests included the installation of an odor abatement system and an ambient air monitoring system. Tests began in June 1997 with the construction of a uniformly-mixed, 905 cubic-yard pile of the excavated soil, which had been run through a two-inch screen. Locally-available cow manure and straw were added as amendments to the soil to create an environment with high levels of nutrients and to maintain desired conditions of temperature, oxygen, pH, and nutrient availability.

The pile was covered with a 40 mil 30-by-60-foot woven tarp to begin the anaerobic cycle. The testing period was extended until September 1998 in order to provide sufficient time for experiencing hot and cold weather operations, assessing the quality of the amendments, and using various mixing equipment such as a loader, roto-tiller, and Fecon and SCAT turners. Amendments were added at weeks 0, 14, 22, 33, and 48 to create a total volume of 1,193 cubic yards after week 48. Aerobic conditions in the pile were created by either mechanically mixing and turning the windrow or by injecting compressed air through

injectors spaced 15 feet apart along the length of the pile. Aerobic and anaerobic operating cycles were varied to maximize contaminant destruction rates. Key operating parameters of the process included a pH of 5-9, residence time of less than six months, temperatures of 35-60°C, and a moisture content of 30-90%.

Soil samples were collected weekly from four locations of the pile, and analyzed for pesticide content, inorganic composition, microbial enumeration, moisture and dry matter, organic matter, pH, surface tension, thiocarbamates, and water-holding capacity. Laboratory analysis indicated that targeted cleanup levels, as specified in the site's record of decision, were achieved for the primary contaminants of concern. In particular, concentrations had dropped significantly for chlordane (47.5 mg/kg to 5.2 mg/kg), DDD (242 mg/kg to 23.1 mg/kg), DDT (88.4 mg/kg to 1.2 mg/kg), and toxaphene (469 mg/kg to 29 mg/kg). Figure 2 illustrates the typical DDT destruction rate observed during this demonstration.

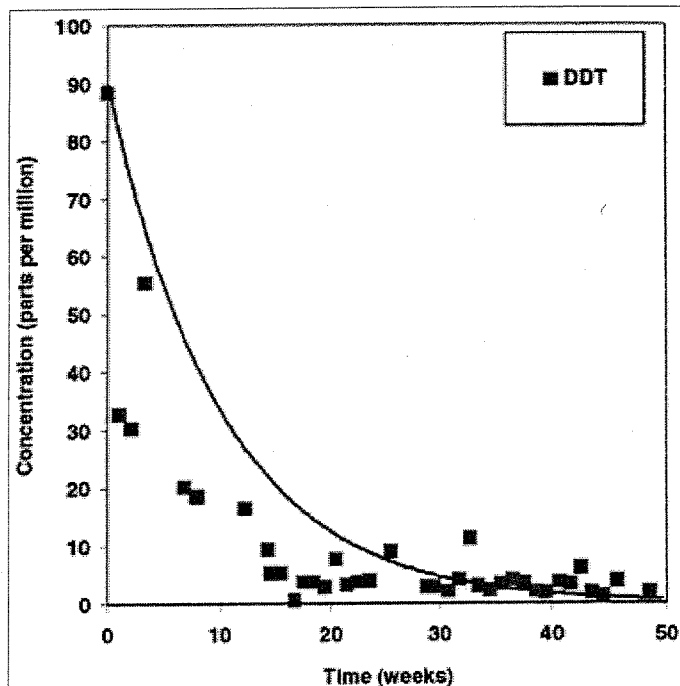


Figure 2. Typical DDT Destruction Rate at the SMC Tampa Site

Of the five amendment periods employed, two were identified as operating under optimal environmental/process conditions. Researchers found that the mixing equipment and duration of mixing steps is critical to the efficiency of this technology. (The SCAT turner proved to serve as the more efficient turner of the composted material.) Although costs are very site-specific, SMC estimates that the cost for cleanup using Xenorem composting at a project such as this is \$192/yard³.

Based on its successful use in pesticide destruction, application of Xenorem technology has been extended to include nitro-aromatics

(TNT, RDX, and MX), polyaromatic hydrocarbons, polychlorinated biphenyls (in development) and other persistent compounds. For more information, contact Brad Jackson (EPA/Region 4) at 404-562-8925 or e-mail jackson.brad@epa.gov, or Frank Peter (SMC) at 302-239-9222 or e-mail jfpeter@aol.com.

Anaerobic Bioremediation of Soil on Tribal Lands

by Jeff Inglis, EPA/Region 9, and George Padilla, Navajo Nation Superfund Program

The Navajo Nation, through its Superfund Program, has teamed with the U.S. EPA's Region 9 Office and the Environmental Response Team (ERT) to remediate soils on tribal lands contaminated with toxaphene, the active constituent of livestock dipping solutions used in the past. At these sites, anaerobic bioremediation through the addition of a multi-part amendment to excavated soils is resulting in a minimum of 80% reduction of toxaphene. Remediation using this process is complete at 22 dip vat sites located on the Navajo Nation lands.

In the 1930s, the Department of the Interior established laws and programs for livestock grazing, and the Bureau of Indian Affairs (BIA) began administering and managing these programs on many tribal lands. Toxaphene was used by the BIA and the Navajo Nation as a pesticide at 250-300 dip vat sites on Navajo lands from 1948 to 1982, when it was banned by the EPA. During this time, sheep and cattle were driven routinely through concrete-lined vats that were positioned partially below grade level and filled with pesticide solutions for the control of ectopic parasites. Approximately 20,000 gallons of the pesticide solution was used each year, and then discharged on-site into ground-level pits. These management practices ceased in the 1980s, but toxic residues had accumulated over the years as a result of pesticide discharge. This pattern was repeated at several other reservations in the Southwest.

In 1992, the Navajo Superfund Program expressed its concerns regarding these sites to EPA's Region 9 Office. As a result, the ERT began researching the potential for an *in-situ* or on-site bioremediation method to treat the sites. A comparison study was conducted to evaluate the effectiveness of anaerobic processes versus combined anaerobic/aerobic processes. Study results indicated that an anaerobic process would achieve the targeted toxaphene cleanup level (25 parts per million for buried soil) in the most cost-effective manner.

In 1994, the EPA Region 9 Emergency Response Office began implementing this anaerobic process for treatment of soils at a dip site located at Nazlini Chapter, near Window Rock, AZ. With toxaphene levels as high as 33,000 parts per million, this site ranked highest on the BIA's list of 22 priority sites. In the area of each dip vat,

remediation efforts began with soil screening to determine the horizontal and vertical extent of contamination, followed by excavation of up to four feet of soil and its transfer to a polyvinyl chloride (PVC)-lined treatment cell. A slurry consisting of 10% manure, 5% lime, 5% blood meal, 0.75% disodium phosphate, 0.25% monosodium phosphate, and 79% contaminated soil was mixed with water and poured into the treatment pit. The pit then was sealed with a PVC cover, and vents were installed to allow for gas emissions.

Over the following 12-month resting period, indigenous bacteria were allowed to multiply while feeding on the toxaphene. Quarterly samples were taken to ensure the progression of contaminant biodegradation. Once target levels were achieved, the pits were opened, drained, left to dry, backfilled, and revegetated. Follow-up sampling has confirmed that toxaphene cleanup levels have been maintained.

Based on the successful results at Nazlini, this anaerobic bioremediation process was applied at the remaining 21 high-priority dip vat sites in treatment cells as long as 300 feet. The Navajo Superfund Program has evaluated an additional 48 dip vat sites on Navajo lands, and currently is working with the BIA to develop a long-term cleanup plan for the remaining sites. It is anticipated that this approach to anaerobic bioremediation may be applied successfully to the remediation of other chlorinated solvents and pesticides, such as DDT. An environmental videotape on this work (*Navajo Vats II*) is available through the ERT products line offered at www.ert.org. For more information, contact Jeff Inglis (EPA/Region 9) at 415-744-2348 or e-mail inglis.jeff@epa.gov, or George Padilla (Navajo Nation Superfund Program) at 520-871-6861 or e-mail gpad@cia-g.com.

[This technology, using a more refined slurry recipe, also has been piloted at two aerial pesticide spraying facilities and used to treat dip vat sites on the Zuni and Pueblo Reservations. Information on using this technique for treatment of pesticide-contaminated soil on the Zuni Reservation is available from Michael Torres (EPA/Region 6) at 214-665-2108 or e-mail torres.michael@epa.gov.]

Upcoming Monitoring Technology Conference

On September 19 and 20, 2000, EPA will sponsor the National Environmental Monitoring Technology Conference at the Hynes Convention Center in Boston, MA. More than twenty panel sessions will be held on topics such as surface water, ground water, and watersheds; ozone and air monitoring; innovative technology verification; hazardous substance monitoring in soils; and technology commercialization.

EPA program offices will be represented by plenary speakers from the National Exposure Research Laboratory, Technology Innovation Office, Environmental Monitoring Public Access and Community Tracking

Program, Environmental Technology Verification Program, Small Business Innovative Research Program, and Center for Environmental Industry and Technology. During the conference, over 100 exhibitors will display information on environmental monitoring and related technologies. To register for exhibit space at the trade show, call 1-888-EPA-7341. Conference registration information is available on the Internet at www.epa.gov/region1.

New Resources Available on EPA's CLU-IN Web Site

The Hazardous Waste Clean-up Information (CLU-IN) Web site, which is managed by EPA's Technology Innovation Office, provides information on innovative treatment technologies to the hazardous waste remediation community. Visit CLU-IN at www.clu-in.org to obtain more information on resources such as these:

An Analysis of Barriers to Innovative Treatment Technologies: Summary of Existing Studies and Current Initiatives. This report (publication number EPA 542-B-00-003), which was published in March 2000, presents a summary of existing studies on barriers that have historically impeded the successful commercialization of innovative treatment technologies. Users may download the document at <http://clu-in.org/pub1.htm>.

Innovative Remediation Technologies: Field-Scale Demonstration Projects in North America, 2nd Edition. This updated system provides a searchable database of information about innovative remediation technology field demonstration projects conducted in North America. Users may search or browse the system at <http://clu-in.org/pub1.htm>.

Upcoming Courses and Conferences. This feature of CLU-IN provides users with the capability to search for courses and conferences by date, name, location, or description from among 172 currently-posted events. Users also may suggest the addition of an event not yet listed in the system. This feature is available at <http://clu-in.org>.

Mention of trade or commercial products does not constitute endorsement by the U.S. Environmental Protection Agency.

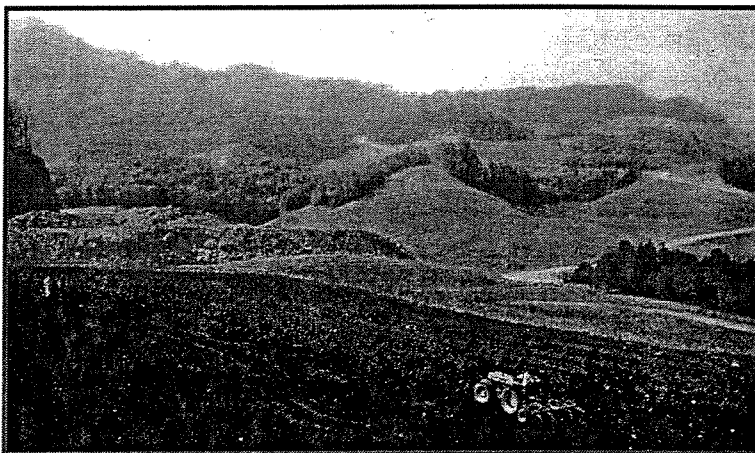
TechDirect

We offer a service—TechDirect—to keep you abreast of new EPA publications and event of interest to site remediation and site characterization professionals. Once a month, a TechDirect message will be sent via email describing new products and instructions on how to obtain them.

ATTACHMENT 5



An Analysis of Composting As an Environmental Remediation Technology



Printed on paper that contains at least 20 percent postconsumer fiber.

Chapter 1

Introduction

The composting process is currently viewed primarily as a waste management method to stabilize organic waste, such as manure, yard trimmings, municipal biosolids, and organic urban wastes. The stabilized end-product (compost) is widely used as a soil amendment to improve soil structure, provide plant nutrients, and facilitate the revegetation of disturbed or eroded soil (Cole, 1994; Cole, 1995; Harmsen, 1994; McNabb, 1994). The information and data presented in this document were compiled and analyzed by Michael A. Cole, Ph.D.

Within the past few years, laboratory-, greenhouse-, and pilot-scale research has indicated that the composting process and the use of mature compost also provide an inexpensive and technologically straightforward solution for managing hazardous industrial waste streams (solid, air, or liquid) and for remediating soil contaminated with toxic organic compounds (such as solvents and pesticides) and inorganic compounds (such as toxic metals). For example, a large number of hydrocarbons, which are common industrial contaminants found in soil and exhaust gas, degrade rapidly during the composting process or in other compost-based processes. Furthermore, the addition of mature compost to contaminated soil accelerates plant and microbial degradation of organic contaminants and improves plant growth and establishment in toxic soils. When mature compost is added to contaminated soils, remediation costs are quite modest in comparison to conventionally used methods. Mature compost also controls several plant diseases without the use of synthetic fungicides or fumigants.

This report summarizes the available information on the use of compost for managing hazardous waste streams (as well as other applications) and indicates possible areas for future investigations. Attention to cross-media transfer of contaminants during implementation of various bioremediation technologies presented in this report is recommended. A recent publication by the U.S. Environmental Protection Agency (EPA), entitled *Best Management Practices (BMPs) for Soil Treatment Technologies* (EPA530-R-97-007, May 1997), could be consulted to address the cross-media transfer concerns.

The Composting Process

Composting is a managed system that uses microbial activity to degrade raw organic materials, such as yard trimmings, so that the end-product is relatively stable, reduced in quantity (when compared to the initial amount of waste), and free from offensive odors. Composting can be done on a large or small scale, with the management requirements and intensity increasing dramatically as system size increases. In its simplest form, compostable material is arranged in long rows (windrows) and turned periodically to ensure good mixing (Figure 1). This process can handle large quantities of input, such as yard trimmings of up to 100,000 cubic yards per year, on only a few acres of land.

Raw materials that tend to be very odorous during composting, such as municipal waste sludge (biosolids), can be processed in more elaborate systems and in a confined facility where odorous air can be treated. These systems use rotating drums, trenches, or enclosed tunnels for initial processing, followed by a covered curing period (Figures 2, 3, and 4). In addition, the Beltsville Agricultural Research Center in Beltsville, Maryland, developed a composting system of intermediate complexity, between open-air windrows and the sophisticated systems shown in Figures 2 to 4 (Parr, 1978; Willson, 1980; U.S. EPA, 1985). The Beltsville system has several desirable features, and its generic design is adaptable to suit specific purposes. As shown in Figure 5, air is drawn through the compostable material and scrubbed of odorous compounds in a soil filter. Mature compost can be substituted for the soil filter. A compost filter has several advantages over a soil filter, including a higher adsorptive capacity for volatile organic compounds (VOCs) and better air permeability properties. Compost filters are currently used in Europe at composting plants to eliminate nearly all volatile emissions.

All composting methods share similar characteristic features and processes. Initially high microbial activity and heat production cause temperatures within the compostable material to rise rapidly into the thermophilic range (50 °C and higher). This temperature range is maintained by periodic turning or the use of controlled air flow (Viel, 1987). After the rapidly degradable components are consumed, temperatures gradually fall during the "curing" stage (Figure 6). At the end of this stage, the material is no longer self-heating, and the finished compost is ready for use. Substantial changes occur in microbial populations and species abundance during the various temperature stages (Gupta, 1987). Mesophilic bacteria and fungi are dominant in the initial warming period, thermophilic bacteria (especially actinomycetes) during the high temperature phase, and mesophilic bacteria and fungi during the curing phase

(Finstein, 1975). The resulting compost has a high microbial diversity (Beffa, 1996 and Persson, 1995), with microbial populations much higher than fertile, productive soils (Table 1) and many times higher than in highly disturbed or contaminated soils. Therefore, compost bioremediation takes far less time than natural attenuation of toxic materials (land farming). Microbial populations in soil (both fertile and contaminated) substantially vary from season to season. In most cases, the addition of compost greatly increases microbial populations and activity (Table 2). Since the microbes are the primary agents for degradation of organic contaminants in soil (Alexander, 1994), increasing microbial density can accelerate degradation of the contaminants (Cole, 1994). In soil systems, microbial composition is greatly modified by organic input composition (Martin, 1992 and Struwe, 1986); the same degree of variation can be expected in composting systems. The impact of initial feedstock composition on microorganism development in compost needs to be further studied.

Table 1
Microbial Populations in Soil and Mature Yard Trimmings Compost

Material	Bacteria (millions per gram dry weight)	Fungi (thousands per gram dry weight)
Fertile soil ^a	6 to 46	9 to 46
Recently reclaimed soil after surface mining ^b	19 to 170	8 to 97
Pesticide-contaminated mix of silt and clay ^c	19	6
Mature compost ^d	417	155

^a Cole, 1976 (for reclaimed soil)

^b Cole, unpublished data

^c Cole, 1994

^d Cole, 1994

Dramatic changes in chemical composition occur during the composting process. Most starting materials for composting are plant-derived residues and contain carbon in the form of polysaccharides (cellulose and hemicellulose), lignin, and tannin. The end-product has a low polysaccharide content, most of which is microbial cell wall and extracellular gums (Macauley,

1993), with about 25 percent of the initial carbon content present in the form of highly stabilized humic substances (Chen, 1993). Organic matter content ranges from 30 to 50 percent of dry weight, with the remainder being minerals. The combination of high organic content and a variety of minerals makes compost an excellent adsorbent for both organic and inorganic chemicals.

The practical aspects of using the composting process or mature compost to manage hazardous industrial waste streams are described in the sources cited above. Additional information can be found in the documents cited in the Bibliography on page 105.

Table 2^{a, b}

Dehydrogenase Activity in Uncontaminated Soil or Pesticide-Contaminated Soil With or Without Mature Yard Trimmings Compost

Percentage of Contaminated Soil	Matrix	Not Planted	Planted
100	Contaminated soil	16 ^c	18 ^c
50	Contaminated soil and	25	32
25	Uncontaminated soil	25	59
0	Uncontaminated soil	40	68
50	Contaminated soil and	336	370
25	Compost	613	575
0	Compost	1,464	1,299

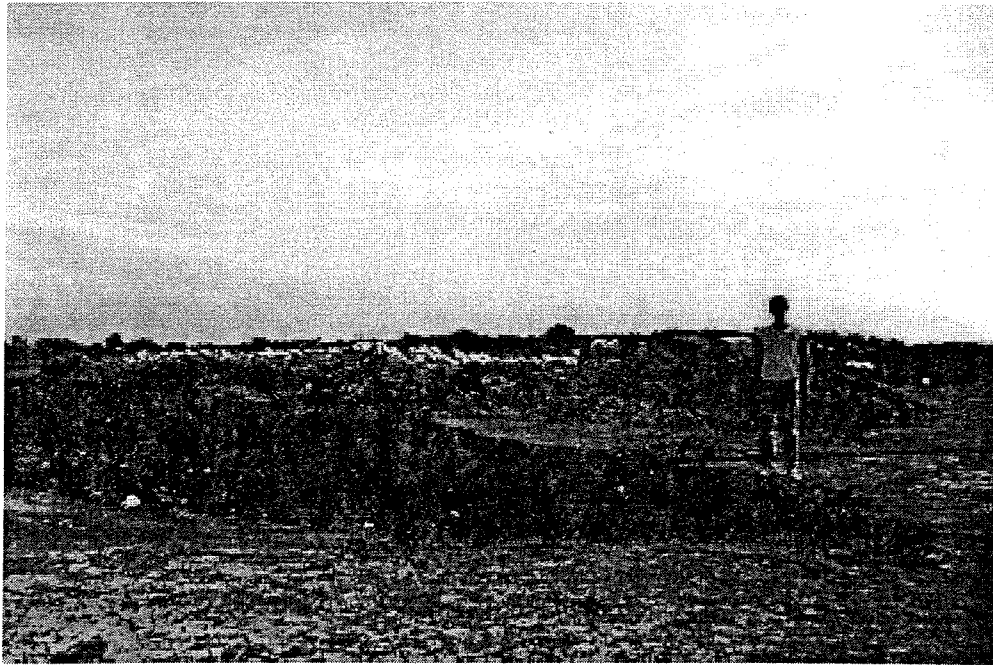
^a This table shows the high dehydrogenase enzyme activity as a measure of microbial activity in contaminated soil.

^b After preparing the mixtures and transferring them into flower pots, the pots were incubated in a greenhouse for 6 weeks. Planted treatments had four corn plants per pot, while unplanted treatments had no plants.

^c Units are μ moles product formed per 24 hours per gram of soil, with higher values indicating greater microbial activity.

Figure 1

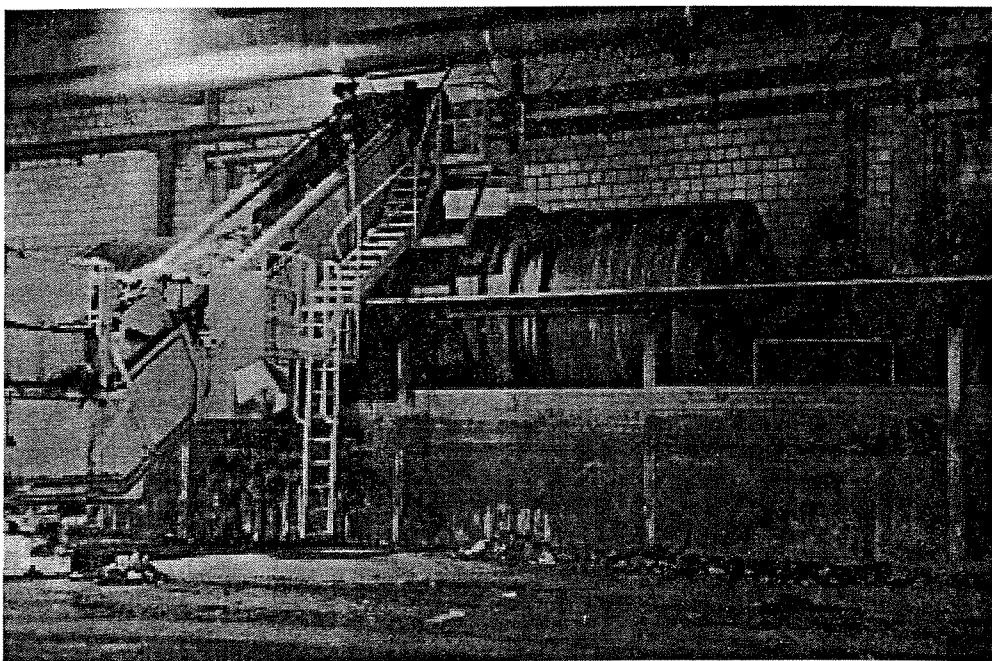
Windrows of Leaves at a Community Yard Trimmings Composting Site



Height and width of windrows are determined primarily by the size of the turning equipment.

Figure 2

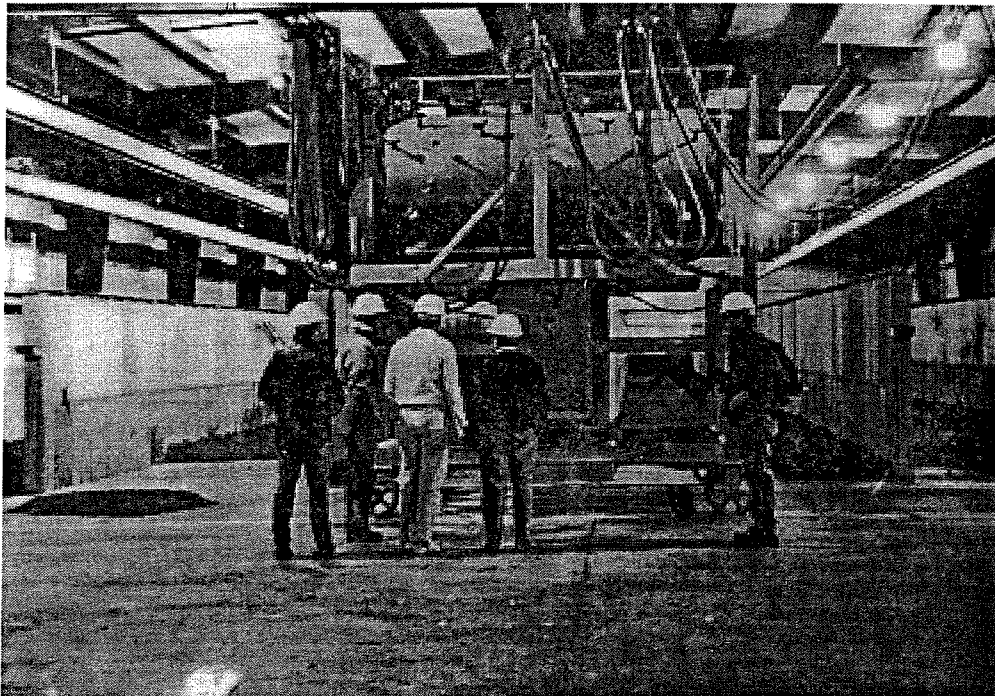
Aerated Rotating Drum Composting System at Aufschafenburg, Germany



The drum temperature and oxygen content are monitored continuously, and air addition and mixing are done as needed to maintain conditions within designated ranges.

Figure 3

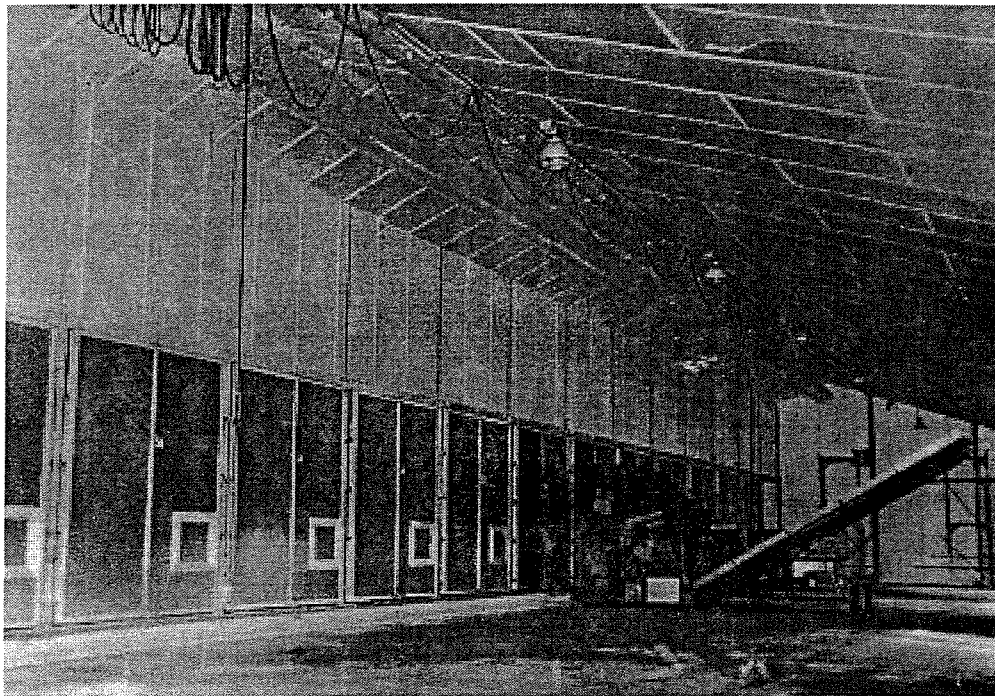
Trench Composting System at Saint Cloud, Minnesota



Air and temperature control is provided by subfloor vents and large blowers. Material is turned daily and water is automatically added as necessary.

Figure 4

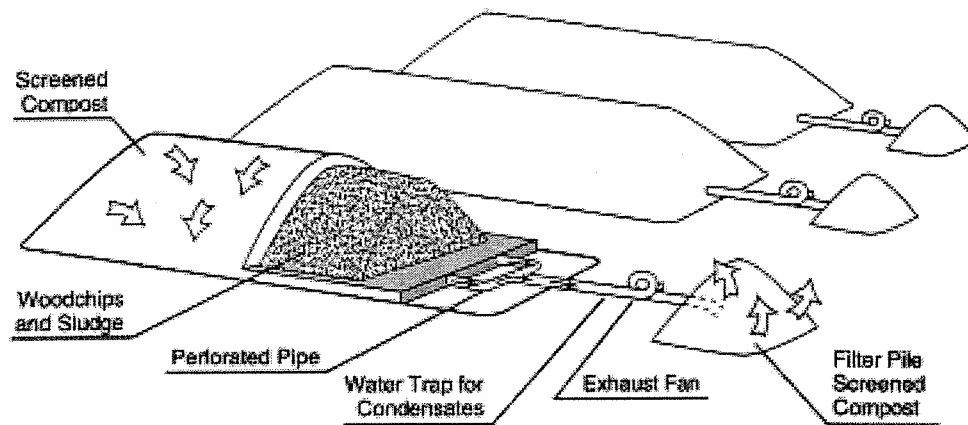
Tunnel Composting System Used in Europe



Exit air is treated in a compost biofilter, and temperature and oxygen content of the air are monitored.

Figure 5

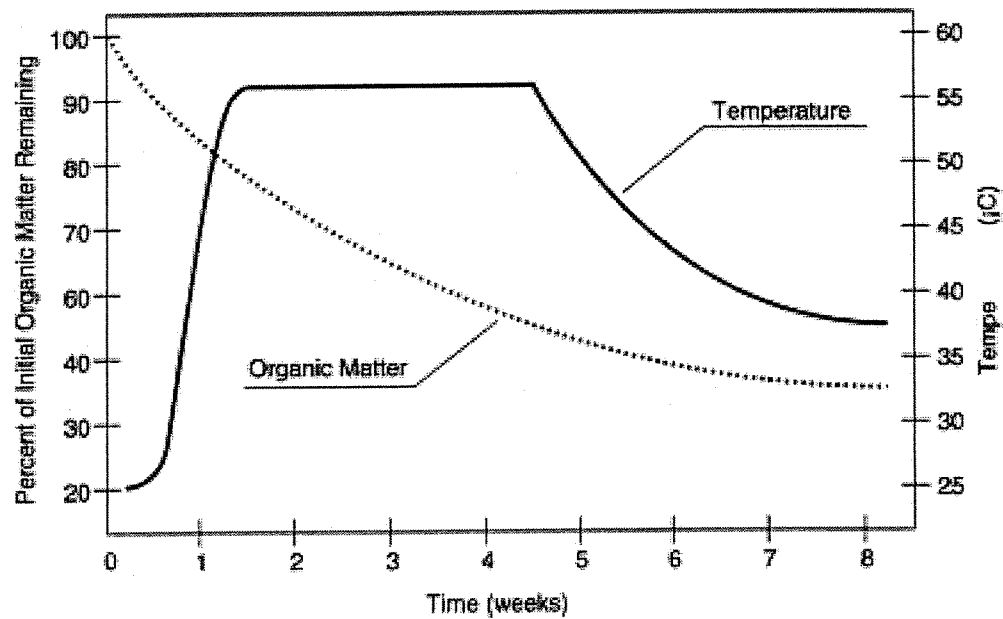
Design of the Beltsville Aerated Pile Composting System



Air is drawn through the composting mass and odorous volatile compounds are removed in a soil biofilter (Willson, 1980).

Figure 6

Temperature Profile and Loss of Initial Organic Material During Composting



The time scale for the entire cycle would range from about 8 weeks to 6 months, depending on the composition of the source material and management intensity. Temperature is measured in degrees Celsius.

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Chapter 2

Remediation of Soils Contaminated With Toxic Organic Compounds

Introduction

Owners of property contaminated with toxic chemicals are required under federal and state regulations to decontaminate the site or remove contaminated soil to a safe disposal facility, such as a hazardous or special waste landfill. Decontamination or removal of soil is costly, as shown by the values in Figure 7. These high cleanup costs may exceed the value of the property and dramatically decrease the willingness of the property owner to initiate remediation. Therefore, inexpensive, effective remedial methods could encourage the cleanup of the nearly 1,300 locations on the National Priorities List (NPL or "Superfund"). Thousands of smaller sites that might pose a threat to adjacent populations also await cleanup. For example, approximately 75,000 to 100,000 leaking below-ground petroleum storage tanks exist in this country (Brown, 1985). In the United States alone, there are about 37,000 candidate sites for Superfund, 80,000 sites covered under the Resource Conservation and Recovery Act (RCRA), 1.5 million leaking underground tanks storing a wide variety of materials, and 25,000 Department of Defense sites in need of remediation (Glass, 1995).

The sale of contaminated property is difficult at best. Many owners abandon their contaminated property rather than try to sell or decontaminate it. These abandoned sites, or brownfields, represent lost opportunities for productive reuse. Long-term use of property for military operations also results in contamination (most often with organic solvents, petroleum hydrocarbons, and explosives). As in the private sector, cost can be a critical barrier to military site remediation. The remediation costs for NPL and RCRA sites alone may reach \$750 billion, an amount equal to the current U.S. military budget for about 15 years (Wilson, 1994). The cost estimate for remediation of sites in the European Union is between \$300 and \$400 billion. At these costs, it is unlikely that more than a small fraction of the most critical sites will ever be remediated.

One possible solution to these problems is use of remedial methods that are significantly less expensive than those commonly used, such as removal of contaminated soil. On average, bioremediation is among the lowest cost methods for detoxification of soils contaminated with organic compounds (Figure 7), and composting is intermediate in cost among the

bioremediation technologies (Figure 8). When comparing the total budget for cleanup of a large site, the savings associated with the use of bioremediation vs. chemical- or physical-based technologies give bioremediation an overwhelming monetary advantage (Table 3).

Table 3
Total Project Costs for Various Remedial Options

Remedial Technology	Total Project Costs^a
Vacuum extraction	\$2.5 million
Compost-based	\$3.6 million
Solidification	\$7.3 million
Thermal desorption	\$11.4 million
Offsite landfill	\$10.8 million
Onsite incineration	\$18.9 million

^a Costs are based on a 1-acre site, 20 feet deep (about 32,000 cubic yards). Values are an average for a variety of biodegradable contaminants such as fuels, lubricants, and polynuclear aromatic hydrocarbons.

Applications of Composting or Compost Addition Methodologies

A wide range of common environmental contaminants degrade rapidly in compost, as summarized in Table 4 and Figure 9. Of the compounds shown in Figure 9, the explosives 2,4,6 trinitrotoluene (TNT) and Royal Demolition Explosives (RDX) are the most widely studied, in experiments ranging from bench (laboratory) scale to large pilot studies. Most of the experiments focused on the composting process, with typical results shown in Figure 10. One study found that up to 30 percent contaminated soil by volume could be mixed with compostable materials and still achieve thermophilic conditions (Brinton, 1994). Another study found that the inclusion of 40 percent contaminated soil in a composting mix resulted in subthermophilic temperatures and reduced degradation of explosives (Williams, 1991). Both of these studies indicate that a mixture of 30 percent contaminated soil with 70 percent initial compost feedstock provides the best results. Volume loss of feedstock is typically about 50 percent of initial, so the final, decontaminated mix has about twice the volume of contaminated soil.

Table 4

Contaminants That Degrade in Compost or During the Composting Process

General Class of Contaminant	Examples
Petroleum hydrocarbons (TPH)	Gasoline, diesel fuel, jet fuel, oil, and grease
Polynuclear aromatic hydrocarbons (PAH)	Wood preservatives, coal gasification wastes, refinery wastes
Pesticides	Insecticides and herbicides
Explosives	TNT, RDX, nitrocellulose

If contaminants degrade completely, disposal of the extra volume should not be a problem. If contaminant degradation is incomplete, however, a substantially larger volume of contaminated material will need to be further treated or disposed of. This problem can be avoided by following a gradualistic approach from bench-scale to pilot-scale to full-scale projects, to ensure that reliable degradation of contaminants can be achieved (Saber, 1995 and U.S. EPA, 1989). One difficulty with this approach, when using the composting process, is that laboratory-scale composting units may not provide results similar in either extent or time scale to results obtained in large-scale composting. For example, one study found relatively poor degradation of the explosive TNT in laboratory reactors (Kaplan, 1982), whereas other studies indicate good degradation of TNT in pilot-scale studies. Based on this example, even partial degradation under laboratory test conditions might be justification for conducting larger scale pilot studies. Increasing the total volume of material is less of a problem when mature compost is added to contaminated soil, since a mixture of 40 percent (by weight) compost and 60 percent contaminated soil provided good degradation of several pesticides (Liu, 1996).

A common complaint about solid-phase bioremediation methods is that they are too slow. For example, commonly used procedures for bioremediation of petroleum-contaminated soils require several months to a year to achieve cleanup, a time scale that may be in excess of established deadlines or the owner's patience. A recent study compared the time required to degrade a mixture of volatile organic solvents, polynuclear aromatic hydrocarbons (PAH), and phenanthrene in a solid-phase system (biopile) and in a slurry-phase reactor. Biopile treatment time was 94 days and degraded 99 percent of initial volatiles, 91 percent of PAH, and 87

percent of phenanthrene. In contrast, a 10-day treatment in a slurry-phase reactor degraded 99 percent of initial volatiles, 63 percent of PAH, and 58 percent of phenanthrene. In this case, the biopile took substantially longer but resulted in greater contaminant degradation and was achieved at a lower cost than the slurry-phase reactor. Extended time periods increase cost, since the site must be monitored and operated for an extended period. Using the composting process or adding mature compost to biopile-type operations, however, may dramatically decrease cleanup time, as shown in the following examples.

One recent study examined the degradation of the herbicide dicamba during the composting process (Dooley, 1995). Successful remediation was achieved in only 52 days, as shown in Figure 11. Typical degradation rates for dicamba in soil, without the compost, are 1 to 2 mg/kg/month (Goring, 1975). Hence, treatment time for a high concentration of dicamba, without using composting, would have been 1 year or more.

In another study, a mixture of soil contaminated with mineral oil and grease (35 percent v/v) was composted with maple leaves (20 percent v/v), alfalfa (35 percent v/v), and other ingredients. Highly weathered hydrocarbon mixtures, such as those present in the soil studied, are often resistant to biodegradation. After an initial period of rapid degradation, degradation of the residual material ceased (Figure 12). During the landfarming phase of the study, only 30 percent of the contaminants degraded after 180 days. In contrast, a 50 percent degradation rate was achieved by composting in 105 days (73 percent degradation was reached in 287 days). An 85 percent degradation rate was achieved by composting oily sludges containing hydrocarbon mixes in the lubricating oil and diesel oil molecular weight range (Persson, 1995). Decomposed horse manure was used to maintain mesophilic (25 °C to 35 °C) composting conditions.

Two recent studies documented the effects of mature compost on hydrocarbon degradation in soil-compost mixes in laboratory reactors (Stegmann, 1991 and Hupe, 1996). The best results were achieved by mixing mature, 6-month-old compost with TPH-contaminated soil. The studies found degradation rates of about 375 mg TPH/kg/day, values much higher than those reported for in situ biodegradation—40 mg/kg/day (Atlas, 1991). TPH-contaminated soils frequently contain 5,000 to 20,000 mg TPH/kg. Based on the rates shown in Figure 13, these materials could be remediated, using compost, in only 2 weeks to 2 months, in contrast to the 6 months or more required for typical landfarming operations. Mass balance studies (Table 5) indicated that during a 21-day treatment period, substantial mineralization and bound residue

formation occurred. The chemical nature of the bound residue was not determined. This material could be either strongly sorbed hydrocarbon or partially degraded hydrocarbon that was coupled to humic materials in the compost. A field-scale study (Bartusiak, 1984) achieved oil degradation rates of about 110 mg/kg/day with a steel mill sludge containing primarily relatively high molecular weight—and therefore, relatively slowly degraded—hydrocarbons (Westlake, 1974).

Table 5

Mass Balance for Carbon From Petroleum Hydrocarbons During Incubation of a Soil-Compost Mixture

Fraction	Percentage of Initial-C in Fraction
Extractable TPH	8
Volatilized	4
Converted to CO ₂	59
Not accounted for (bound residue)	24
Microbial biomass	4

Source: Hupe, 1996.

Degradation of various aromatic compounds has been studied in composting systems, including chlorophenols, pesticides, and PAH. The degradation of 2-chloro- and 2,4-dichlorophenol during composting results in a rapid loss of parent compounds, as shown in Figure 14 (Benoit, 1995). Mass balance studies indicate that complete mineralization (formation of carbon dioxide) was relatively limited, with most of the carbon going into a bound residue fraction (Figure 15). The bound residues might be the result of oxidative coupling of the chlorophenols, or their metabolites, to humic materials in the compost. Similar behavior of chlorophenols has been reported in soil (Stott, 1983). A similar study yielded a 90 percent degradation rate, in 5 days, for easily degraded naphthalene and 1- and 2-methylnaphthalene during composting of wood preservative-contaminated soil, as well as 80 percent degradation for slowly degraded PAHs, such as chrysene and pyrene, in 15 days (Civilini, 1996a).

In addition to the direct use of composting or mature compost to accelerate contaminant degradation, microorganisms also can be isolated from compost for both basic biochemical studies and as inoculants in remediation projects (Civilini, 1996a; Civilini, 1996b; Castaldi, 1995).

The high temperatures achieved during composting also accelerate the relatively slow chemical reactions in soil, where temperatures are only 15 °C to 30 °C in most temperate climates. By comparison, typical temperatures during composting are 50 °C or higher. Humic materials can catalyze degradation of atrazine (Li, 1972) and other compounds (Stevenson, 1994). Since the humic content of mature compost can be as high as 30 percent by weight, whereas typical soils contain less than 5 percent, compost provides a much higher concentration of reactive material than is found in soil.

Composting of contaminated materials can be done on a field scale using simple designs, such as those shown in Figures 16 and 17. The designs are mechanically simple, are inexpensive, and provide full containment of materials while preventing washing away by rain. If volatile compounds are being processed, air flow can be set to draw air into the pile and pass it through a biofilter to remove the volatiles. In this case, the complexity is in the biological component, not the physical components, and the only moving parts are the microbes and the ventilation system. The result is likely to be an effective, fast-acting, and inexpensive remediation system. Guidelines for successful operation of these systems are provided in the references for Chapter 1.

No remedial technology is appropriate for all contaminants and situations. Guidelines for the best use of composting or addition of mature compost for remediation include:

- Contaminants less than 20 feet deep
- Contaminants that are biodegradable and/or strongly adsorbed to the compost
- Soil that is toxic to plants and microbes

Use of the composting process or addition of mature compost is not likely to be successful for polychlorinated biphenyls (PCB) because the biodegradability of the more highly chlorinated congeners is poor. For example, one study found that only the congeners with two or three chlorines were degraded during composting (Michel, 1997). Similarly, another study found that benzo(a)pyrene, a 5-ring polynuclear aromatic compound of poor biodegradability, was not degraded during bench-scale production of municipal solid waste (MSW) compost (Overcash,

1993). These authors also found that the PCB 2,2',4,4'-tetrachlorobiphenyl (added at the beginning of the composting process) was present in the finished compost (i.e., it was not degraded during the process).

Before composting can be widely accepted as a remedial technology, several issues need to be resolved. First, substantial anecdotal evidence indicates that the degradation rate of specific contaminants is affected by the materials being composted. For example, 16 percent mineralization was found for ¹⁴C-labeled pentachlorophenol during 60 days of incubation with laboratory-produced compost or spent mushroom substrate (a form of compost created from the material that remains after commercial production of edible mushrooms, *Agaricus bisporus*). Thirty percent mineralization occurred, however, in mushroom medium of a lesser degree of stabilization (Semple, 1995).

Second, a relatively low extent of mineralization of aromatic compounds occurs in compost, and, in some cases, water-extractable metabolites form. In some studies, potentially toxic intermediates formed during laboratory composting of explosives (Kaplan, 1982). One recent study reported a 98 percent transformation of TNT during composting, but the material retained about 12 percent of its original mutagenicity, and the aqueous leachate still had about 10 percent of its toxicity to an aquatic invertebrate, as shown in Figure 18 (Griest, 1993). When properly handled, however, field-level composting of explosives can reduce contaminants to undetectable levels with an extremely low occurrence of toxic intermediates, as was recently accomplished at the Umatilla Army Depot (Emery, 1996).

The other critical issue is whether the lack of full degradation and formation of nonextractable metabolites is a satisfactory endpoint of remediation. The behavior of aromatic compounds in compost is similar to the behavior of hydroxylated or amino aromatic compounds in soils, where partial degradation occurs, followed by covalent coupling of the metabolite to humic substances, as shown in Figure 19 (Bertin, 1991; Calderbank, 1989; Richnow, 1994; Haider, 1994; Sjoblad, 1981). Hydroxylated metabolites form during the degradation of nearly all aromatic compounds (Kelley, 1993). In some cases, coupling of chlorinated phenols to humic materials is accompanied by dehalogenation (Dec, 1994). This process, referred to as formation of bound residues, results in the long-term immobilization of metabolites but not their complete destruction. The bound residues typically are very slowly degraded (Wolf, 1976 and Völkel, 1994). Bound residues are defined by the International Union of Pure and Applied Chemistry (IUPAC) as "chemical species originating from pesticides, used according to good

agricultural practice, that are unextracted by methods which do not significantly change the chemical nature of these residues" (Völkel, 1994). In practice, loss of extractability by organic solvents is suggestive of bound residue formation (Haider, 1994). The process is not simply adsorption (Piccolo, 1994), since sorbed low-molecular weight metabolites often remain solvent-extractable. Bound residue formation results from the synthesis of relatively labile bonds, such as ester groups, creating relatively low long-term stability.

On the other hand, formation of ether linkages between humic materials and metabolites results in relatively long-term stabilization of the metabolite in a form of low bioavailability. If the metabolite is actually incorporated into the core structure of the humic acid (Stevenson, 1994), the residence time of the metabolite-derived carbon will be decades to centuries. Substantial amounts of ^{14}C derived from ^{14}C -labelled 2,4-dichlorophenoxyacetic acid (2,4-D) are incorporated into humic and fulvic acids during composting of yard trimmings containing 2,4-D (Michel, 1995).

During a recent bioremediation project, Bioremediation Service, Inc., successfully bioremediated 14,000 tons of TNT, RDX, HMX, and other nitroaromatic compound-contaminated soils at the Umatilla Army Depot. A specific recipe of organic amendments was selected to balance the C:N ratio, structure, moisture, and porosity and to optimize explosive degradation. At project end, over 75 percent of all samples indicated that the explosives had been degraded to below detection by EPA SW-846 Method 8330. What remained was a humus-rich soil, with no toxic intermediates, that has been shown to be a value-added soil additive (Emery, 1996).

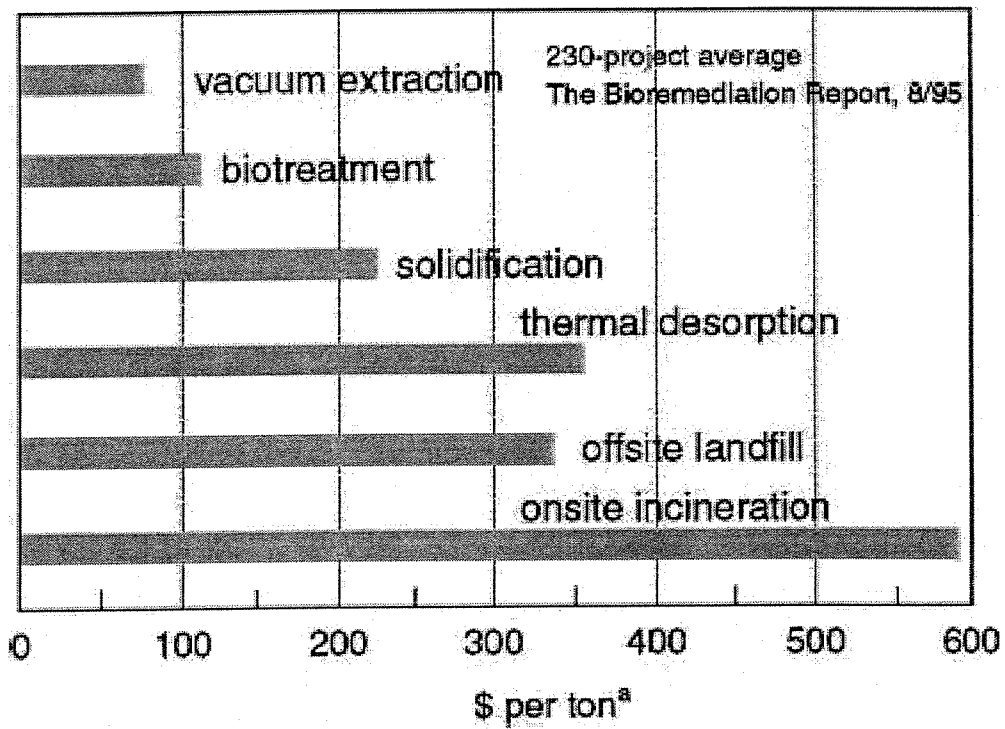
A number of studies on xenobiotic degradation in compost were conducted by measuring the loss of only the parent compound, but these studies did not adequately measure volatilization or adsorption of compounds to vessel components, such as plastics. At thermophilic temperatures, volatilization losses can be significant. One study found that nearly 50 percent of added chlordane is volatilized, but only about 5 percent is converted to bound residues; the balance is recovered as parent compound (Petruska, 1985). Another study reported 17 percent volatilization, 45 percent adsorption to vessel materials, and 25 percent biodegradation of ^{14}C -naphthalene in laboratory reactors (Silviera, 1995). If the study detailed only the loss of naphthalene, 87 percent of the naphthalene would have been apparently degraded.

A third issue that requires resolution is the fact that the outcome of remediation experiments may vary depending on the scale of the experiment. For example, bench-scale results may not transfer well in terms of degradation rate to pilot-scale or field-scale experiments. In several

cases, better results are obtained in larger scale experiments when compared to very small-scale laboratory experiments. Part of the difficulty in this case is probably the result of the inability to generate typical and authentic composting conditions in small laboratory containers. For pilot-scale composting studies, a volume of at least 10 to 20 cubic meters of material is required to achieve the typical thermal profiles seen in large windrows. Hence, the results from a pilot study of only a cubic meter may not transfer to a larger system.

Figure 7

Comparative Costs of Remedial Options for Soils or Hazardous Wastes

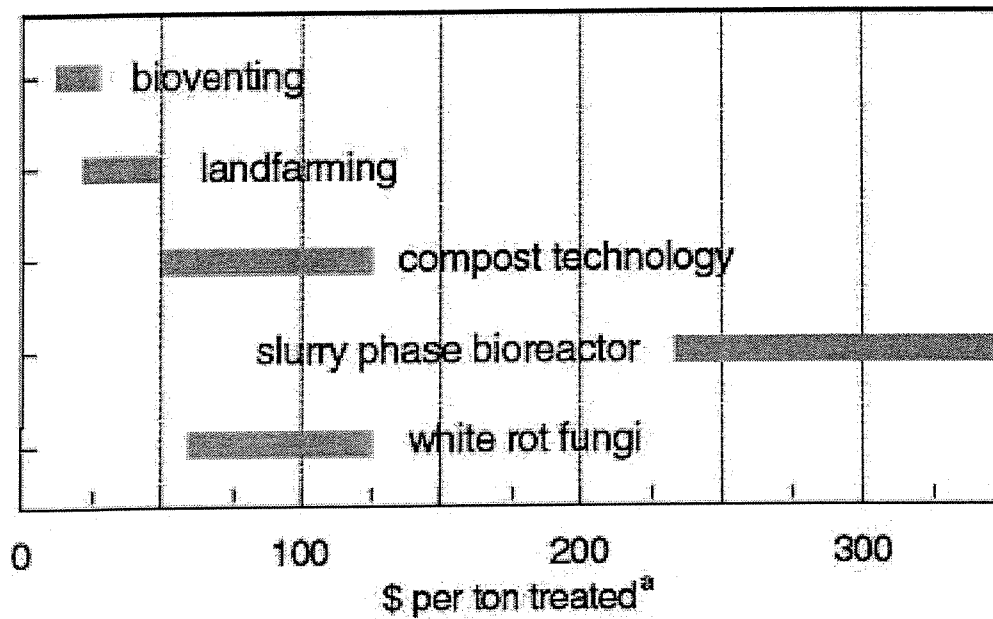


^a Values are an average for a variety of biodegradable contaminants such as fuels, lubricants, and PAH.

Data obtained from The Bioremediation Report, August 1995.

Figure 8

Comparative Costs of Bioremediation Options for Soils or Hazardous Wastes



^a Values are an average for a variety of biodegradable contaminants such as fuels, lubricants, and PAH.

Figure 9

Structures of Organic Compounds That Have Been Shown to Degrade During Composting or in Soil Amended With Mature Compost

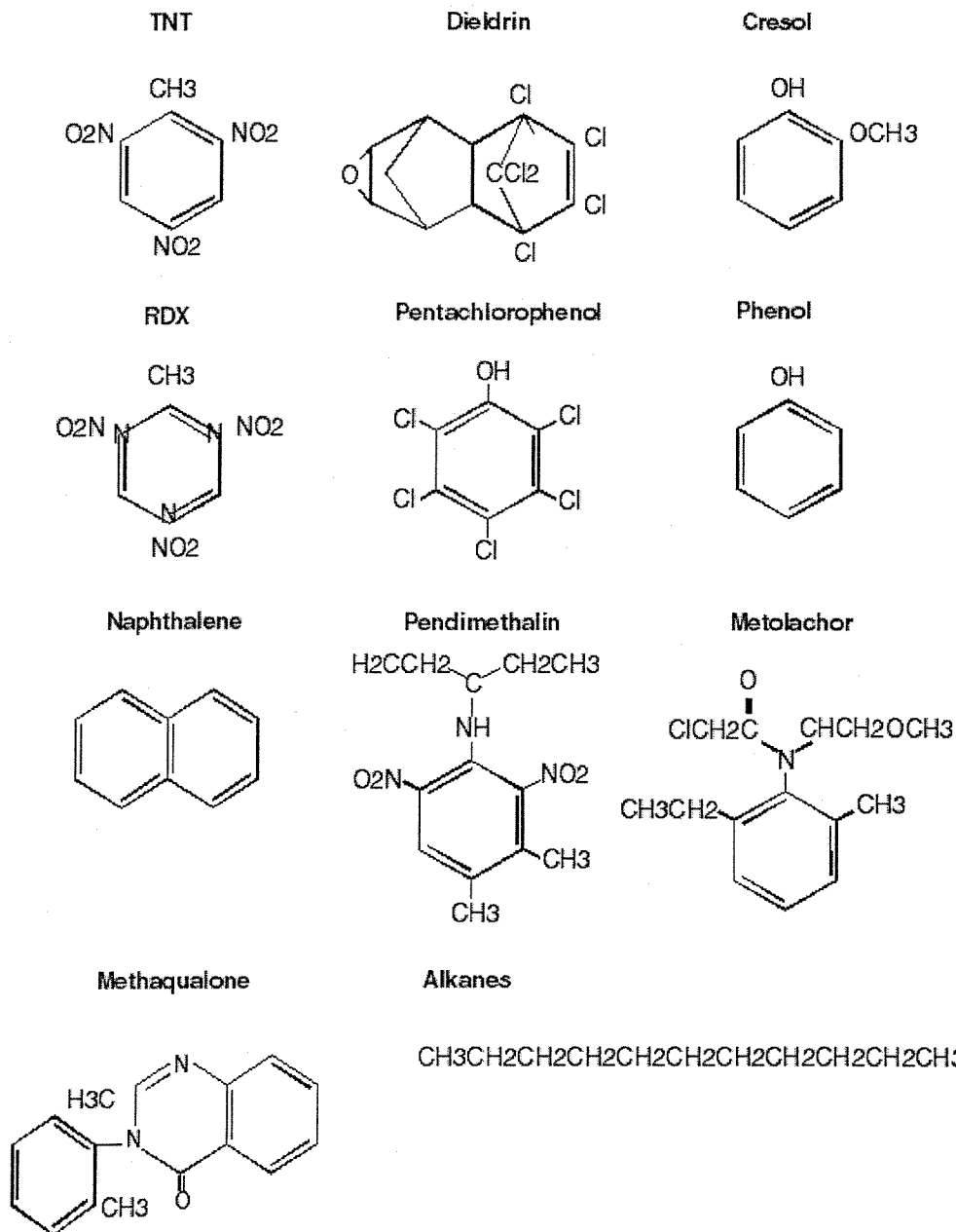
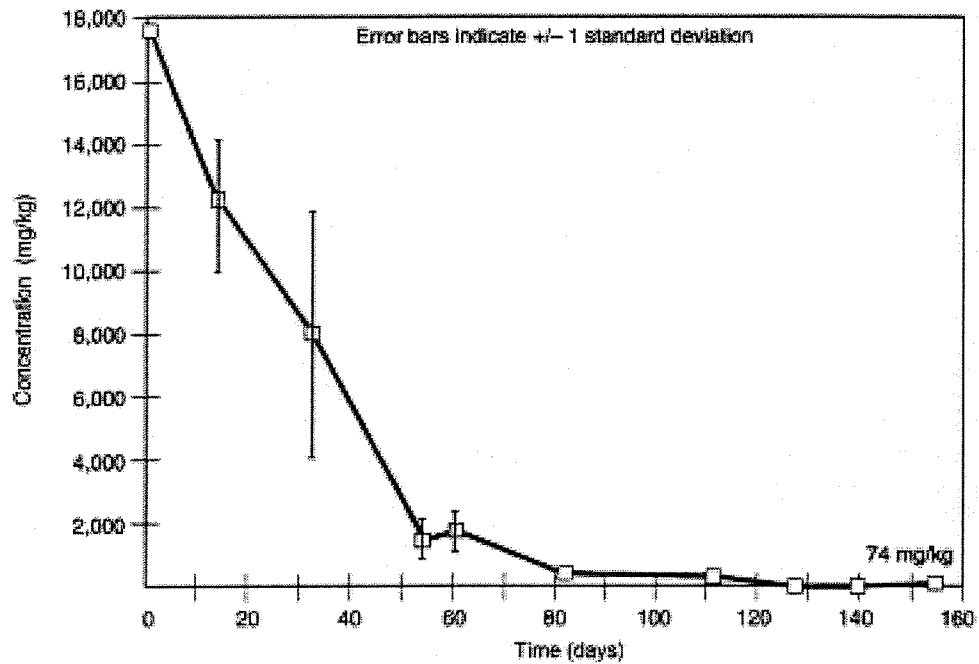


Figure 10

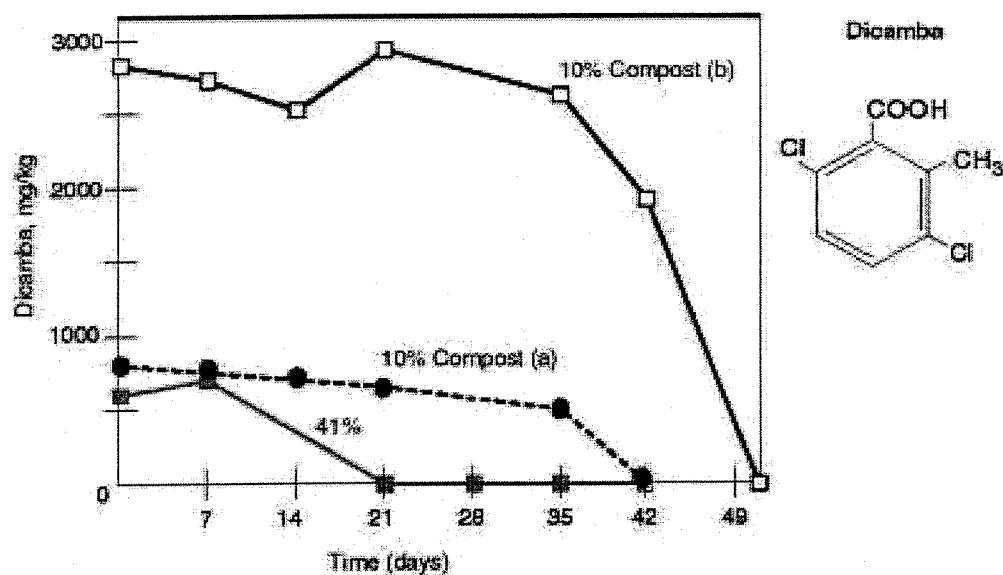
Degradation of the Explosive TNT During Composting



Source: Williams, 1993

Figure 11

Degradation of the Herbicide Dicamba During Composting



^a A mixture of 10% compost with a waste containing a low concentration of dicamba.

^b A mixture of 10% compost with a waste containing a high concentration of dicamba.

Source: Dooley, 1995

Figure 12

Degradation of Mineral Oil and Grease During Composting

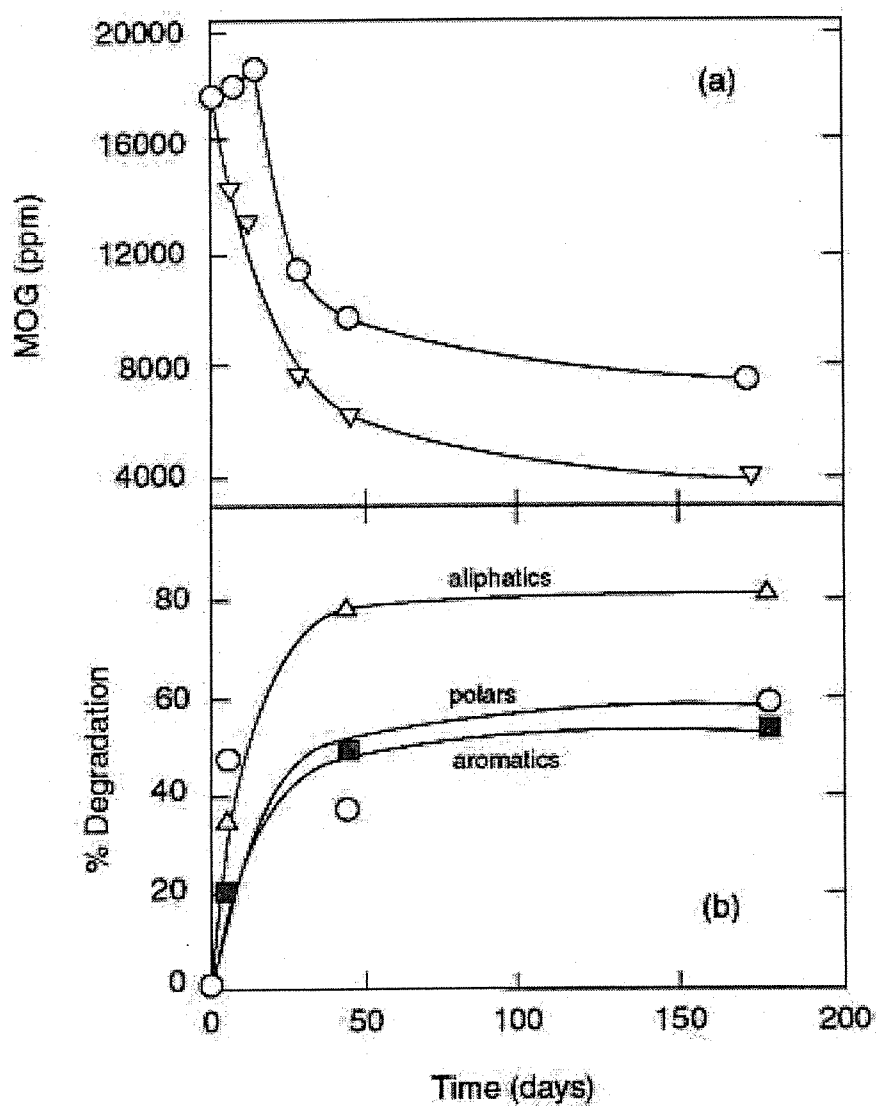


Figure A: Degradation of mineral oil and grease (all components).

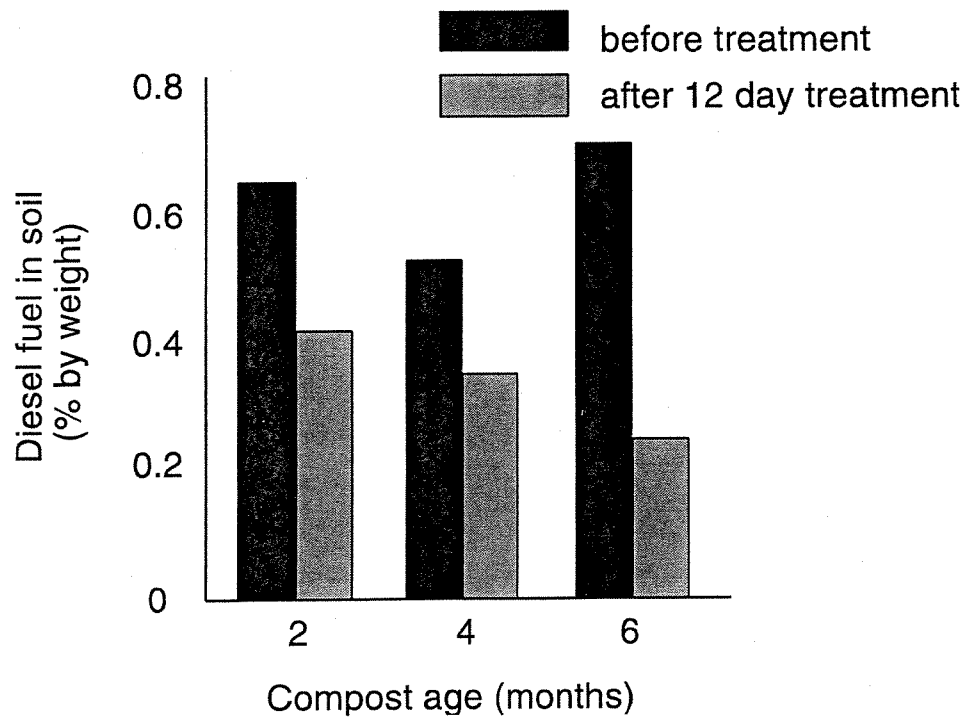
Figure B: Degradation of specific components.

Circles: Degradation of aliphatic polar components.

Source: Beaudin, 1996

Figure 13

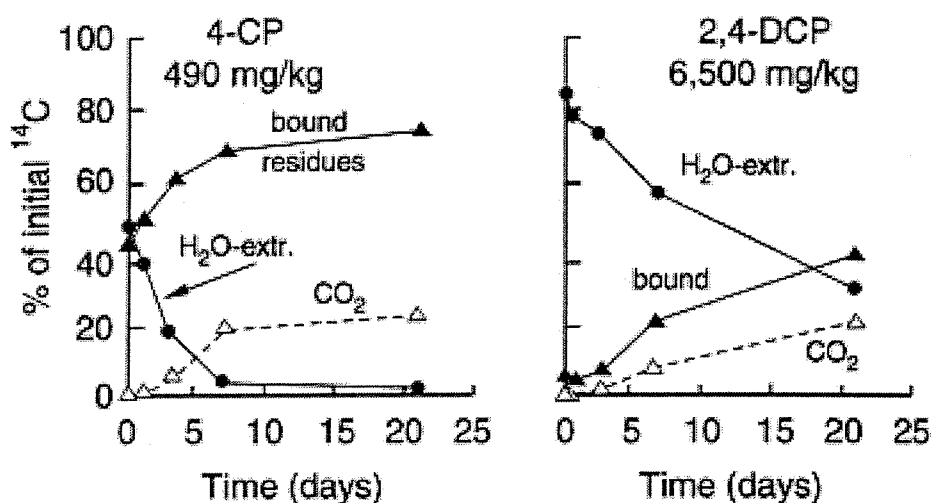
Degradation of Petroleum Hydrocarbons in Compost-Amended Soil



Source: Stegmann, 1991

Figure 14

Degradation of 2-Chlorophenol (2-CP) and 2,4-Dichlorophenol (2,4-DCP)
During Composting

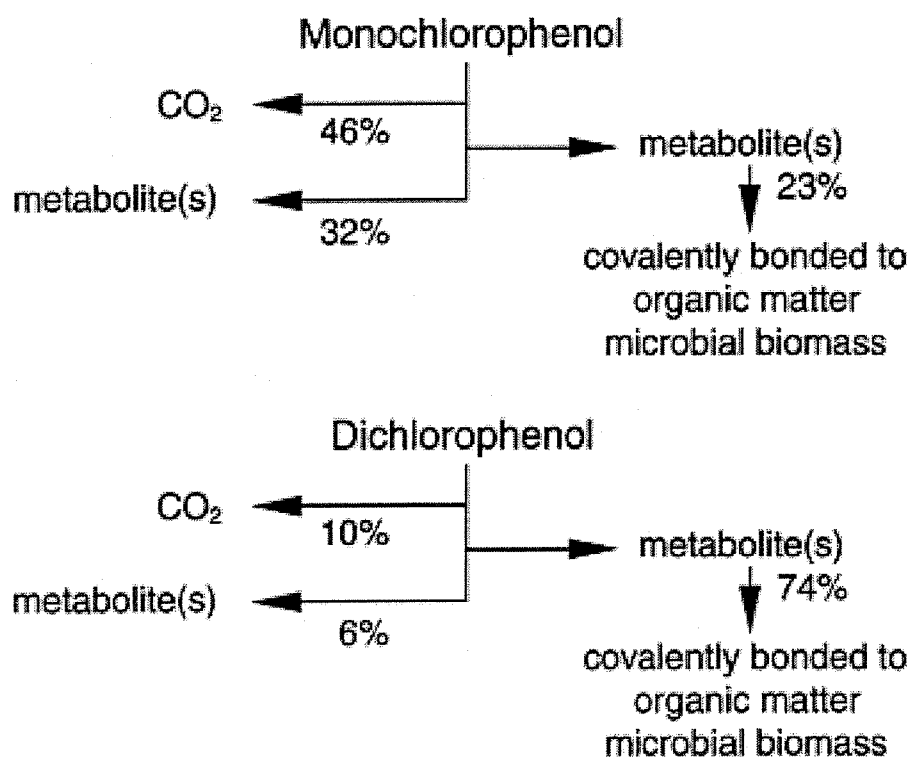


"Bound residues" are compounds that are unextractable by water and/or methanol.

Source: Benoit, 1995

Figure 15

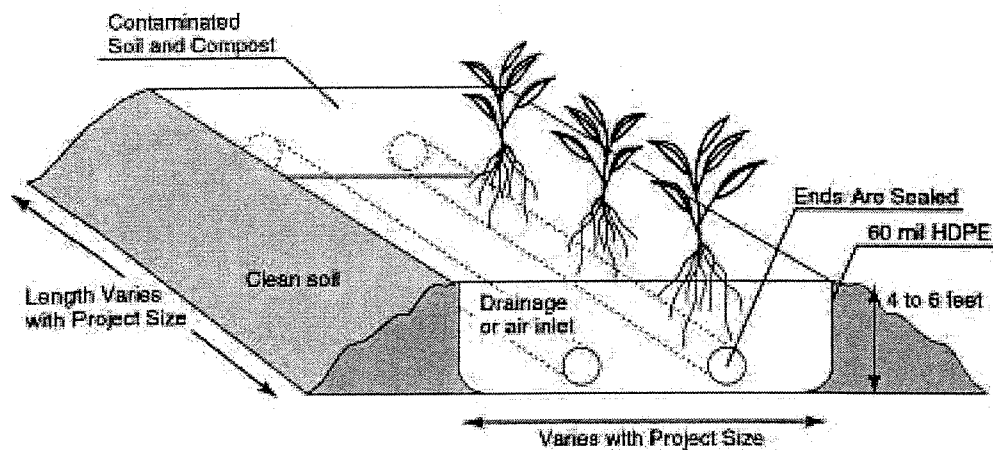
Distribution of ^{14}C Derived From 2-CP and 2,4-DCP After Composting



Source: Benoit, 1995

Figure 16

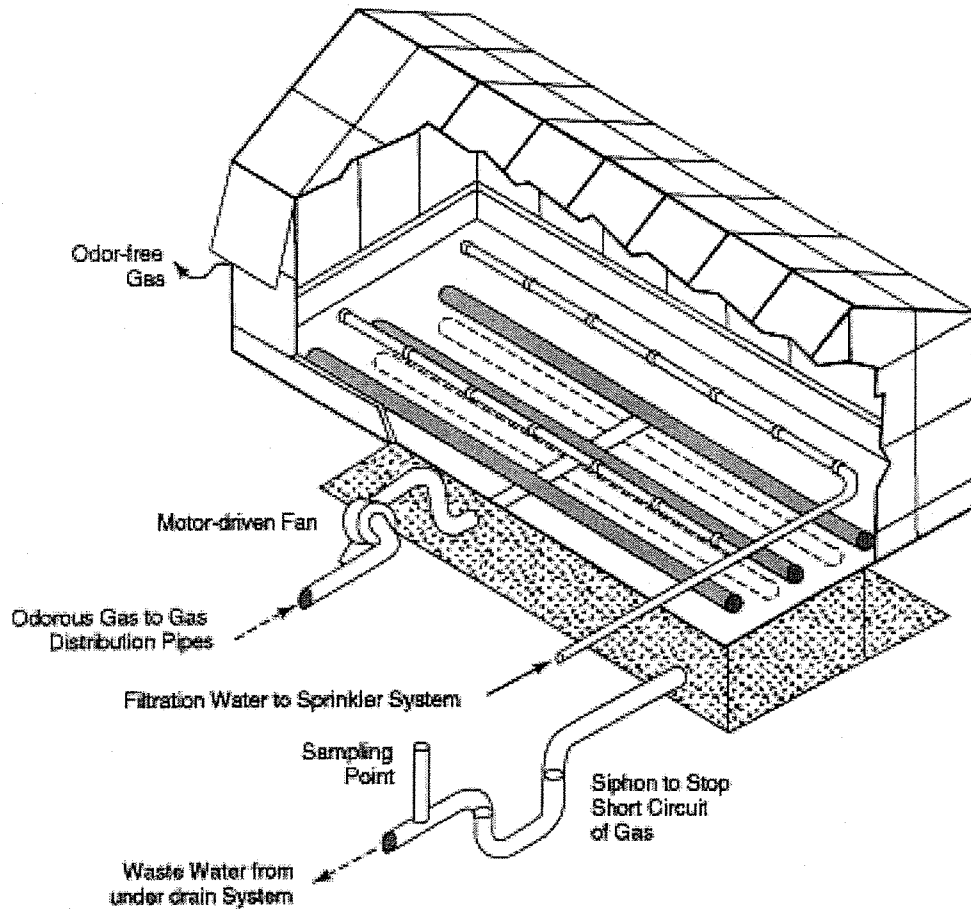
A Simple Contained System for Composting of Hazardous Waste or Treatment of Mixtures of Compost and Contaminated Soil



Source: Cole, unpublished

Figure 17

Enclosed Biofilter Design for Capture of Volatiles Produced During Composting of Contaminated Soil

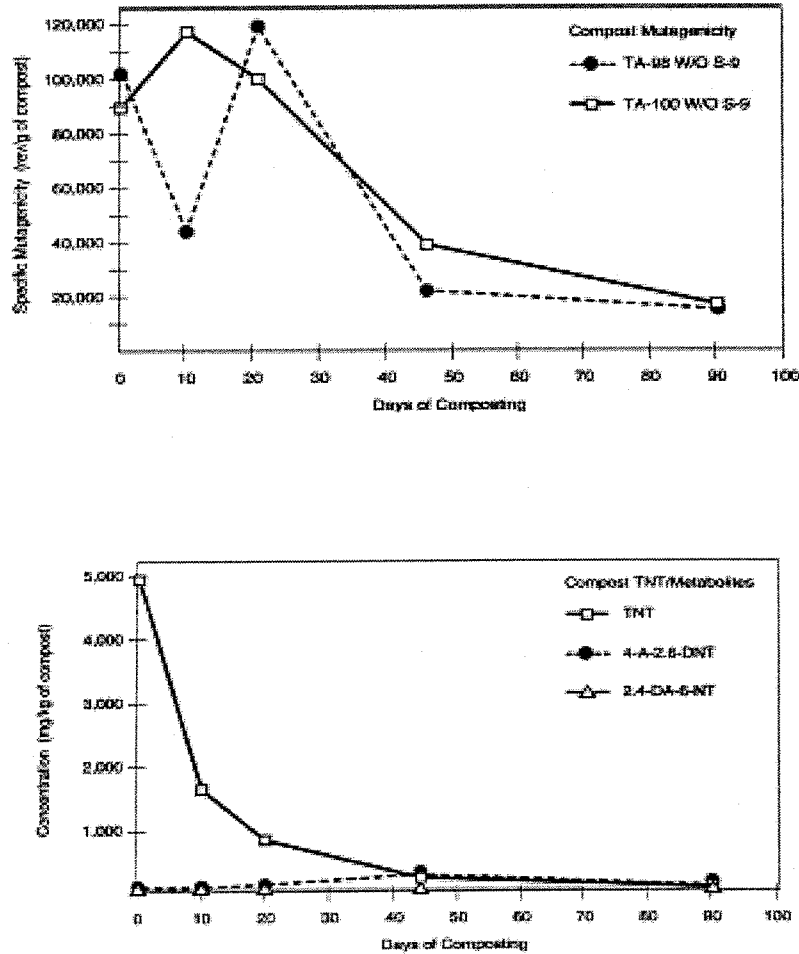


Note: Soil warmth could be maintained by heat from input gas. Gas distribution pipes are buried.

Source: Carlson, 1996

Figure 18

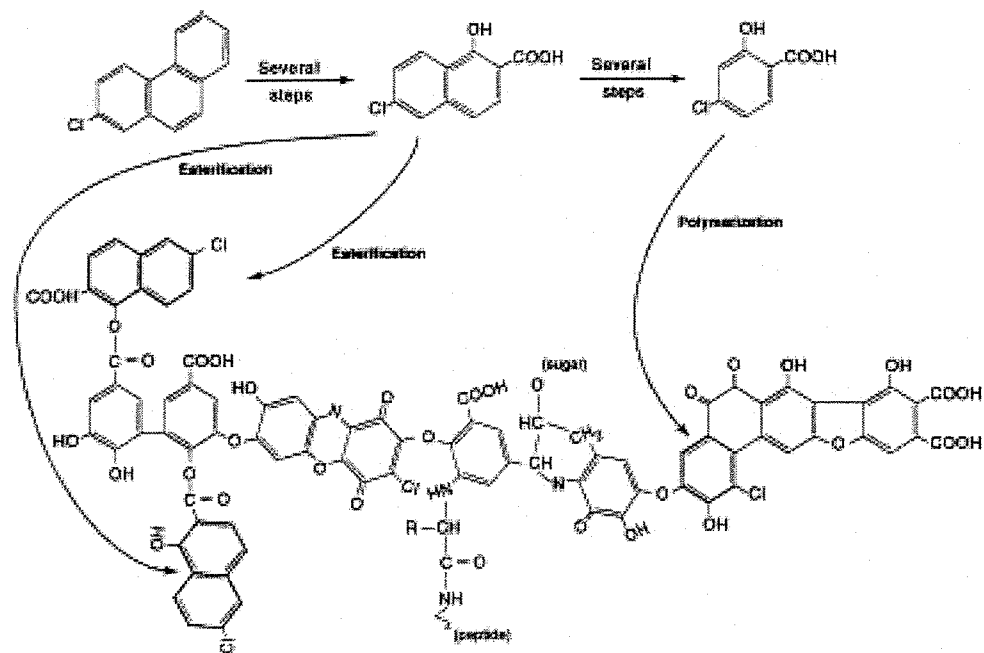
Reduction in Total TNT Content, Leachable TNT, Toxicity, and Mutagenicity of Explosives-Contaminated Soil During In-Vessel Composting



Source: Griest, 1993

Figure 19

Possible Mechanism for Formation of Bound Residues During Composting of Soil Containing Aromatic Contaminants



Source: Humic acid structures (Stevenson, 1994), reactions (Richnow, 1994)

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ATTACHMENT 6

Ferns Remove Arsenic from Soil and Water

By Kate Ruder

Posted: August 6, 2004

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Six years ago researchers in Florida discovered ferns growing in soil contaminated with arsenic at an abandoned lumber yard. The ferns had been soaking up arsenic from the soil through their roots and storing it in their fronds.

Arsenic, which is poisonous to humans, is used to pressure treat lumber and to make semi-conductor chips. It was once also used to manufacture insecticides and chemical weapons, and it ranks number one on a list of substances to be removed from contaminated sites by the U.S. Department of Health and Human Services' Agency for Toxic Substances and Disease Registry.

The Florida discovery marked the first time a plant had been found to naturally take up arsenic in high concentrations. The fronds of *Pteris vittata*, or brake fern, can be clipped or the entire plant can be dug up and disposed of safely, a process that was patented by the Florida group in 2001.

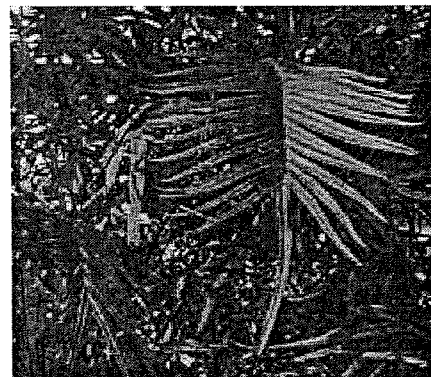
"It was odd to identify a plant that has such useful characteristics that hadn't yet been discovered," says Bruce Ferguson, CEO of Edenspace, a Virginia-based company that now licenses the patent for the ferns and sells them commercially under the name "edenfern."

Today, the ferns are being used throughout the United States to remove arsenic from soil and drinking water. Edenspace, which specializes in a variety of plants to cleanup toxic substances, has twelve employees and reported \$1.2 million in revenues last year.

Ferns in Washington, D.C.

This summer 2,800 edenferns are being planted in the nation's capital as part of a pilot project to remove arsenic from 600 acres near American University in the Northwest part of Washington, D.C. The area, called Spring Valley, includes residential and university property.

Spring Valley was once used by the US government for research and testing of chemical weapons during World War I, and remnants of these chemicals, including arsenic, are still thought to be underground. The US Army Corps of Engineers began to clean up the area in the 1990s, yet today there are more than 100 private properties that have contaminated soil waiting to be removed and replaced.



The ferns aren't genetically modified, but they have been bred to have desirable traits. Image courtesy Edenspace.

Residents, meanwhile, have voiced concern over the Corps removing or damaging big, old trees on their property in the process of digging up contaminated soil. In hopes of removing arsenic in a less destructive manner, the Corps of Engineers has planted the ferns at three locations in Spring Valley.

“We’ve had positive reactions from residents [about using the ferns] so far, especially from people who have had concerns about their trees,” says Ed Hughes of the Army Corps of Engineers in Baltimore, who is spearheading the cleanup effort.

The Corps plans to test the ferns for arsenic and then dispose of the ferns and fronds in airtight containers. If the arsenic levels are extremely high in the leaves, the plants are disposed of at a hazardous waste facility.

The plants pose an overall low risk and could be dangerous to children or animals only if consumed in large quantities, says Michael Blaylock, director of technology at Edenspace. In comparison to the ferns, household plants such as poinsettias and potato vines are more toxic to pets and people.



Fern test sites along Van Ness Street in Washington, DC.
Image courtesy Army Corps of Engineers.

New Mexico Drinking Water

The ferns are also being used to remove arsenic from drinking water. In a recent pilot study in Albuquerque, New Mexico, the ferns significantly decreased the level of arsenic in samples of the city’s drinking water.

Some varieties of the plant live hydroponically, or without soil, in the water. City workers set up a staircase of trays holding about 100 ferns with water filtering down from the top through the trays of ferns. About 450 gallons of water were pumped through the system daily.

The city of Albuquerque will probably never use the ferns on a large-scale because it uses chemicals to treat water supplies, as do most large cities.

But the study demonstrated that the low-cost technology could be feasible for the drinking water of rural communities in New Mexico and other parts of the western United States. Parts of the West have high levels of arsenic in drinking water because of naturally occurring volcanic rocks underground.

New strategies are needed to remove arsenic from drinking water cheaply and effectively for big and small cities in the United States. Under the Safe Water Drinking Act, the Environmental Protection Agency recently revised the standards for allowable limits of arsenic in drinking water. The new standards, which take effect in 2006, change the allowable level to ten parts per billion from 50 parts per billion.

In addition to the United States, the ferns could be used in small communities in developing countries such as Bangladesh, which has problems with arsenic in drinking water. The company recently made the ferns available royalty free to parts of the developing world, according to Ferguson.

Growing a Better Fern

The ferns have not been genetically modified, but they have been bred at Edenspace to have desirable traits. The brake fern, which is native to the Southeastern United States, tolerates sun

surprisingly well for a fern.

Scientists at the company bred the ferns to be more adapted to cold weather, and they also bred larger ferns that take up more arsenic. The ferns are now grown year round in Florida, and can be purchase online for \$4.95 a piece, not including shipping.

"Most people don't know we're around," says Ferguson. Most of his customers are well-versed in environmental issues. He suggests that homeowners might plant them under a deck with pressure-treated wood or in a yard where an old pile of lumber might have been.

"The ferns are easy to grow and inexpensive," he says. "And they look nice too."

See Related GNN Article: [Scientists modify plants to remove environmental toxins](#)

Ma, L.Q. *et al.* A fern that hyperaccumulates arsenic. *Nature* 409, 579 (February 1, 2001).

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LETTER 8

M R Wolfe & Associates

Mark R. Wolfe

April 28, 2006

- 8-1** The commenter provides a general introduction to subsequent comments, standard of CEQA review, and technical experts who have also provided their comments. The commenter summarizes the purpose and requirements of CEQA and states that the EIR falls short of the requirements as detailed in the subsequent comments. Please refer to responses to comments 8-2 through 8-113 for information related to specific concerns of the commenter. The investigation of hazardous materials on the site followed a systematic and thorough process in close coordination with DTSC and in compliance with state regulatory procedures. The DEIR and Recirculated DEIR were prepared in accordance with CEQA and State CEQA Guidelines for contents of an EIR in that the environmental documents fully disclose in good faith the hazardous materials analysis, its conclusions about environmental and health risks, and potentially significant impacts. Please refer to Master Response 4, "Section 3.4.1, "Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents," for a detailed discussion of the methodology used in evaluating hazardous contaminants on the project site.
- 8-2** The commenter summarizes requirements for addressing hazards contained in the State CEQA Guidelines and selected court cases and states the general comment that the DEIR fails to meet these requirements as described in subsequent comments. The investigation of hazardous materials on the site followed a systematic and thorough process in close coordination with DTSC and in compliance with state regulatory procedures. The DEIR and Recirculated DEIR fully comply with CEQA and State CEQA Guidelines for contents of an EIR in that the environmental documents fully disclose in good faith the hazardous materials analysis, its conclusions about environmental and health risks, and potential significance of impacts. Please refer to Master Response 2 and responses to comments 8-1 and 8-3 through 8-113.
- 8-3** The commenter makes the general point that the Phase II investigation and the removal action workplan (RAW) are flawed and introduces a bullet list of summary comments on specific concerns. Please refer to Master Response 4, "Section 3.4.1, "Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents," for a detailed discussion of the methodology used in evaluating hazardous contaminants on the project site. Regarding the adequacy of the Phase II investigation, the Department of Toxic Substances Control (DTSC) issued a letter indicating that they had approved the Phase II – Site Characterization Report (see Appendix A of this document). Responses to specific comments on the RAW appear below.
- 8-4** The commenter states that the DEIR provided inadequate site characterization including incomplete identification of chemicals of potential concern, sampling, and laboratory analysis. Please refer to Master Response 4, "Section 3.4.1, "Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents," for a detailed discussion of the methodology used in evaluating hazardous contaminants on the project site. Regarding the adequacy of the Phase II investigation, the DTSC issued a letter indicating that they had approved the Phase II – Site Characterization Report (and the methodology contained therein) (see Appendix A of this document).

The soil sampling approach was extensive, thorough, and systematically executed, as described herein. Soil samples were collected from approximately 60 locations across the entire Project Site. An additional 76 samples were collected to determine the extent of contamination. This work was performed in accordance with California Environmental Protection Agency (Cal EPA) DTSC guidance¹ for sampling agricultural sites for future schools, as approved by DTSC. This methodology is appropriate not only because of its approval or endorsement by DTSC, but also because it is widely used throughout California for the clean up of agricultural soils and is appropriately tailored to each project based on the specific site conditions encountered at each location. Because of the additional sensitivity of children to potentially toxic substances, sampling and testing protocols for potential school sites require more samples and tests than sampling and testing protocol for other land uses such as the Proposed Project and is meant to provide a rigorous analysis that would provide substantial evidence that the site has been comprehensively investigated for the potential presence of hazardous materials. As a result, this sampling protocol is the most stringent protocol recognized by the State to characterize a site.

The depth of sampling that occurred at the Project Site was determined in compliance with state standards based on the potential contaminants present on the site (which were identified based on extensive review of historical materials – see Master Response 4, “Section 3.4.1, “Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents.” Decisions on sample depths were made based on protocol outlined in DTSC’s Interim Guidance for Sampling Agricultural Soils for School Sites, starting at shallow levels and progressing deeper, as needed based on sample results. Agricultural research related to chemical use at the site involved application of pesticides/herbicides, which typically are designed to “stick” to the plant to prevent pests from attacking the plant at the ground surface. Herbicides are also designed to “stick” to the ground surface to inhibit weed growth. The initial soil samples from the 60 locations were collected from the ground surface to 6 inches below the surface. Where chemicals were identified above State or USEPA standards, additional soil samples were collected at adjacent locations and additional depths of 2 feet or more. Samples were collected and analyzed at increasing depths until chemical levels were below or near the State or USEPA standards. The maximum depth of sampling was 10 feet below ground surface (bgs). At depths greater than 4 feet bgs, no chemicals were identified above clean up goals.

Based on all records collected and reviewed (see Master Response 4, “Section 3.4.1, “Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents”) during preparation of the Phase I, approximately 90 chemicals were used at the Project Site (see Phase I study in Appendix D of the DEIR). Review of the physical characteristics of these chemicals revealed that 76 of them had low toxicity based on the small quantities used on the Project Site. Therefore, the persons performing the Phase I study concluded, consistent with American Society for Testing and Materials (E5127-05 and E1903-97[2002]) protocol that these chemicals did not need to be sampled and tested in the Phase II evaluation. DTSC has agreed with this methodology, based on its review and approval of the Phase II report. The remaining 14 chemicals were sampled and tested at approximately 60 locations throughout the Project Site. In addition, although there was no evidence of use at the Project Site, the 60 samples were also tested for an additional 75 pesticides/herbicides that were known to be in common use prior to 1979 (although no evidence suggests that they were used at the Project Site) and that could be potentially toxic and persistent in the environment. These samples were tested using approved laboratory protocols described in the Phase II – Site

¹ California Environmental Protection Agency – Department of Toxics Substances Control (DTSC), *Interim Guidance for Sampling Agricultural Soils for School Sites (Second Revision)*, August 26, 2002.

Characterization Report (Appendix E of the Recirculated DEIR). Therefore, the DEIR and supporting analysis provide a comprehensive evaluation of the potential chemicals that could create a hazardous condition at the Project Site.

- 8-5** The commenter states that the DEIR provided an inadequate assessment of human health risks and did not prepare a human health risk assessment. Please refer to Master Response 4, “Preparation of a Health Risk Assessment.” Following completion of the Phase II –Site Characterization analysis (Appendix E of Recirculated DEIR), an internal draft of a screening-level Human Health Risk Assessment (HHRA) was prepared to determine the areas of the site that would potentially require remediation as a result of health risks these areas may pose to existing nearby residents and future residents of the Project Site. While the internal draft HHRA was being prepared, DGS entered into the VCA with DTSC and prepared the RAW, which established the cleanup levels for arsenic and dieldrin at the Project Site. As described above, arsenic is being cleaned up to naturally occurring background concentrations and dieldrin is being cleaned up to the residential Preliminary Remediation Goals (PRG), which will allow unrestricted residential land use of the Project Site once remediation is completed. While an internal draft HHRA was prepared, it was never finalized or submitted to the DTSC for review because the need for such an assessment was eliminated by DGS’s agreement to clean the site to a level that is protective of peoples’ health. While the HHRA was inadvertently included in the reference chapter of the DEIR, a HHRA was neither required by DTSC nor relied upon in preparing the hazardous material analysis for the DEIR.
- 8-6** The commenter states the DEIR has an inadequate and inconsistent approach to establishing clean up criteria. Please refer to Master Response 4, Section 3.4.1, “Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents.” As stated in the response to comment 8-4, sampling and testing at the BAREC property followed the Cal EPA-DTSC school site protocol (Cal EPA-DTSC, 2002), which is the most stringent State-recognized standard for site characterization. This methodology is appropriate not only because of its approval or endorsement by DTSC, but also because it is widely used throughout California for the clean up of agricultural soils and is appropriately tailored to each project based on the specific site conditions encountered at each location. DTSC has agreed with this methodology, based on its review and approval of the Phase II – Site Characterization report (see Appendix A of this document). The clean up goals established for the Project Site are the same as at other non-State owned properties. The Santana Row development (across Winchester Boulevard from the project site) had the same contaminant clean up goals for unrestricted residential use as at the BAREC property and concentrations of contaminants were greater than those found at the Project Site. Areas that have chemicals of concern above State screening levels will be remediated consistent with the clean up measure outlined in the RAW prior to re-use of the site. Soil samples will be collected from the excavated area by a qualified environmental professional and analyzed by a California-certified laboratory to confirm that clean up goals have been achieved. If the confirmation samples show that elevated concentrations of chemicals remain, additional soil will be excavated and removed until the clean up goals for unrestricted residential use are met and verified by DTSC. This approach ensures the site meets stringent clean up standards after the completion of soil removal and remediation. Unless DTSC issues a no further action letter, which certifies that the site has been cleaned up in accordance with the RAW, no sale or development of the site will occur. Therefore, irrespective of the soil clean up methodology used, soils at the site would meet DTSC clean up standards.

- 8-7** The commenter states the DEIR has an inadequate and inconsistent approach to establishing clean up criteria in support of estimating the extent of soil removal. Please refer to Master Response 4, “Section 3.4.1, “Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents” and responses to comments 8-4 and 8-6. As described in response to comment 8-6, confirmation sampling of on-site soils will be performed to ensure that on-site soils meet established clean up goals. Therefore, irrespective of the soil clean up methodology used, soils at the site would meet DTSC clean up standards.
- 8-8** The commenter states the DEIR has inadequate risk management measures to protect future occupants from residual contamination. Please refer to Master Response 4, “Section 3.4.1, “Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents.” As described in the RAW, contaminated soils on the Project Site would be removed so that the site can attain a level of clean up that allows unrestricted residential use. Further, as described in response to comment 8-6, confirmation sampling of on-site soils will be performed to ensure that on-site soils meet established clean up goals. For this reason, following remediation, no risk management measures would be necessary.
- 8-9** The comment states that laboratory analysis was conducted for only a handful of the 90 known pesticides at the site and no analyses were conducted for pesticides that may have been used prior to the time that records were kept. The site characterization used a screening process to focus the more detailed investigations on the important constituents that had the potential to pose hazards, based on historic use information. For additional discussion regarding this issue please refer to Master Response 4, “Section 3.4.1, “Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents” and response to comment 8-4.
- 8-10** The commenter states that theoretical calculations for pesticide half-lives were not presented in the Phase II report. The sample calculations are presented on page 11 of the Phase II and the data used in these calculations are presented in Tables 3a, 3b, and 3c. Appendix A of the Phase II report contains the information from the pesticide records. Some copies of the DEIR were inadvertently missing Tables 3a, 3b, and 3c of the Phase II report as a result of an apparent copy production error. These pages have been included as Appendix A of this document. Although the tables were not included in the DEIR appendix, the analysis presented in the DEIR provided a summary of the evaluation presented in the Phase II report, among other supporting reports, and based its impact conclusions on all evidence in the record at the time the analysis was prepared. The Phase II report is a part of the administrative record and has been available for review at the City of Santa Clara. The report was made available to Mr. Wolfe on April 14, 2006. As such, while the table pages were not physically contained in some DEIR documents, they were in the record and available for public review during the DEIR review period, and their absence from DEIR copies does not change the analysis or conclusions presented in the EIR.
- The commenter states concerns that the theoretical calculations for pesticide half-lives are not accurately reflective of “real” conditions. The results from the theoretical calculations for pesticide half-lives are typically conservative compared to real conditions (i.e., they tend to overstate potential hazard), because the theoretical calculations do not consider other site factors that contribute to pesticide degradation. Therefore, the theoretical calculations generally overestimate the amount of pesticide remaining in the soils (and, therefore, overestimate potential hazards). This conclusion is supported by prior testing by Federal and State agencies at other agricultural sites, which typically require only testing of organochlorine (i.e., man-made organic chemicals) pesticides, because organochlorine pesticides do not degrade significantly over time. Organochlorine pesticides (as well as other pesticide types)

were tested at approximately 60 locations across the Project Site.

The comment also states that the soil sampling did not follow an approved protocol. As discussed in detail in the response to comment 8-4, the sampling was conducted in accordance with the Cal EPA-DTSC guidance (Cal EPA- DTSC, 2002).

The comment also states that there is a high groundwater table at the site and that no ground water sampling was conducted. There is no evidence of a high groundwater table at the site and available evidence indicates that groundwater is sufficiently deep to avoid potential contamination concerns. The shallowest groundwater encountered at a nearby site, 690 Winchester Boulevard, is between 20 and 30 feet bgs. No groundwater was encountered at borings to 10 feet bgs on the Project Site. No groundwater sampling is warranted because the maximum depth of soil contamination above clean up goals is 3 feet bgs. Soil samples collected and analyzed for chemicals from 4 feet bgs have chemical concentrations that are below clean up goals, so the need to excavate much below 4 feet bgs, if at all, is not expected. Even if some deeper soil removal is needed, based on field samples during remediation, there is no evidence to indicate any need to approach 10 feet bgs, which has been demonstrated to be above groundwater levels from on site borings. As described in response to comment 8-4, the nature of pesticides and herbicides uses was to adhere to the applied areas, and there is no scientific evidence to support the claim that pesticides have “been pushed into the vadose zone by 70 years of irrigation” as the commenter suggests. The chemicals of concern are generally water insoluble and therefore, their ability to migrate in soil is limited. Further, based on soil sampling conducted at the site, there is no evidence that contamination has migrated beyond 3 feet bgs. The sampling approaches are appropriate and consistent with EPA-DTSC guidance, which is widely used throughout California (Cal EPA-DTSC, 2002). Therefore, there is no need for groundwater sampling at this site.

The commenter states the Phase II investigation relied on out-of-date closure documents with limited testing to conclude that there are no risks. The data collected during closure activities of on-site facilities (e.g., evaporation pond, underground storage tanks [USTs]) were reviewed by regulatory agencies (the Regional Water Quality Control Board [RWQCB] and the City of Santa Clara Fire Department) and are still current to the conditions at the Project Site. The sampling data collected during closure of the former USTs and evaporation pond showed no evidence of a chemical release or environmental hazard to the site. In addition, with one exception, the data collected during these closure investigations complied with DTSC requirements for the number of samples collected and the chemicals analyzed (Cal EPA-DTSC, 2002). The one exception was resolved with additional sampling for arsenic that was performed in the former evaporation pond area in April 2003. Additional sampling for arsenic was performed because the detected concentration of arsenic during the evaporation pond closure investigation was higher than typical arsenic background concentrations. No evidence of elevated arsenic below the former evaporation pond was identified during the April 2003 investigation. The results of the closure investigations and April 2003 sampling are discussed in Sections 1.1.4.1, 1.1.4.2, and 2.2.15 of the Phase II (Appendix E of the Recirculated DEIR).

The results of the closure investigations and April 2003 sampling are discussed in Sections 1.1.4.1, 1.1.4.2, and 2.2.15 of the Phase II (Appendix E of the Recirculated DEIR). As discussed in Section 1.1.4.2 of the Phase II, during removal, the pond liner was observed to be in good condition with no evidence of leaks. Soil was also excavated from below the liner during removal. Pesticide concentrations in soil samples collected above and below the liner were well below current State or Federal levels for unrestricted (residential) land use. The results for arsenic from the 1987 closure report were inconclusive because the analytical detection limit was too high. As a result, additional samples were collected and analyzed in

2003 to verify that arsenic concentrations were within acceptable background levels. The 2003 results show no evidence of elevated arsenic or leaks from the pond.

As discussed in Section 1.1.4.1 of the Phase II report, during UST removal, there was no evidence that the USTs had leaked, as noted by UC and City of Santa Clara Fire Department personnel. Soil sampling was conducted to confirm that the USTs had not leaked. The soil samples were analyzed for gasoline, diesel, lead, benzene, toluene, ethylbenzene, and xylenes. None of these constituents were detected. Because there is no evidence that the USTs leaked, as confirmed by prior sampling results and SCFD personnel, no additional sampling or investigation of the USTs is necessary.

8-11 The commenter states that the RAW is not based on a health risk assessment. Please refer to Master Response 4, Section 3.4.3 “Preparation of a Health Risk Assessment,” for a discussion why a HHRA is not required.

8-12 This comment questions the adequacy of the site background data supporting a clean up goal of 20 mg/kg for arsenic. As discussed with the DTSC in meetings related to this project, background data for arsenic could not be collected for the Project Site because the entire area surrounding the site had been historically used as orchards. Arsenical pesticides were commonly used in orchards as early as the 1920’s. DTSC had encountered a similar dilemma during development of nearby Santana Row (approximately 0.5 mile southwest). Because no area-specific arsenic background data were available, other data and studies (such as the Scott study referenced in the Phase II Site Characterization Report [Appendix E of the Recirculated DEIR]) were used to estimate natural background levels of arsenic in surface soils at the Project Site. In addition, Figure 7 in the Phase II –Site Characterization Report presented a histogram and cumulative frequency plot of arsenic concentrations of the approximately 70 shallow soil samples collected from the Project site. These type of data plots are typically used to determine appropriate background concentrations at sites where site-specific background concentrations are not available. The cumulative frequency plot indicated an inflection point at 20 mg/kg suggesting that arsenic concentrations above 20 mg/kg were related to man-made sources of arsenic. As such, the data plotted in this figure suggests that a maximum background concentration of 20 mg/kg for arsenic is appropriate and soil with arsenic concentrations above 20 mg/kg should be remediated. Further, the nearby Santana Row Project, located less than 0.5 mile southwest of the project site, also assumed that 20 mg/kg was an appropriate clean up goal for arsenic for unrestricted residential use. As such, the clean up goal for arsenic is reasonable and protective of human health, and is the same as at other non-State owned properties.

Furthermore, as discussed by the California Environmental Protection Agency (California EPA) in their documentation of California Human Health Screening Levels (CHHSLs) (Cal/EPA 2005) and by the USEPA in their documentation of the Region IX preliminary remediation goals (PRGs) (USEPA 2002), the concentration of arsenic in soils corresponding to a cancer risk of 1×10^{-6} for a resident is well below naturally-occurring background levels of arsenic in most areas in California and throughout the U.S. Background arsenic concentrations reported in California range from 0.6 to 11 mg/kg, as reported in the comprehensive study by Bradford et al. (1996) and background concentrations reported in soils in northern Santa Clara County range from not detected to 20 mg/kg. California EPA notes that the agency does not require clean up of soil below background levels. Because 20 mg/kg is the background concentration for arsenic in the project area, this concentration level has been determined by the USEPA to not result in significant health risks, and this background concentration was determined to be appropriate to clean up soils in hot spot areas on the site through the Phase II Site Characterization Report, it was selected as the clean up goal for the hot spot areas with

approval from DTSC (see Appendix N of the Recirculated DEIR). With the exception of the identified arsenic hot spot areas on the project site, arsenic concentrations across the site varied from 0.5 to 19 mg/kg. Once the targeted arsenic hot spot areas are remediated to levels at or below 20 mg/kg, average soil concentrations of arsenic across the site were determined to be 9 mg/kg, which would be in the mid-range of background arsenic concentrations detected throughout Santa Clara County. (see Table 10 of the Phase II Site Characterization Report, Appendix N of the Recirculated DEIR) With implementation of the clean up activities outlined in the RAW, average arsenic concentrations in project site soils (i.e., 9 mg/kg) would be well below the established arsenic background concentrations (i.e., 20 mg/kg) for the project site.

In the Draft RAW, the sampling methodology and clean up goals were identified for the Project Site. DTSC approved the public release of the Draft RAW. DTSC thus approved the methodology used to characterize on-site contamination and the proposed methods by which contamination would be remediated (see Appendix N of the Recirculated DEIR). This methodology is appropriate not only because of its approval or endorsement by DTSC, but also because it is widely used throughout California for the clean up of agricultural soils and is appropriately tailored to each project based on the specific site conditions encountered at each location. DTSC is a Responsible Agency under CEQA with respect to approval of the development project, and is the Lead Agency under CEQA with respect to approval of the RAW. DTSC will be relying on the analysis included in the DEIR and Recirculated DEIR describing the potential impacts associated with implementation of the RAW. While DTSC would issue its final approval of the RAW once all public comments are received and responded to, DTSC has indicated through approval of the Phase II Site Characterization Report that the methodology used in characterizing on-site soils meets their requirements. DGS and DTSC have been working closely together to characterize on-site soil contamination and identify the appropriate remediation methods to clean up on-site soils to unrestricted residential use levels consistent with the terms of the Voluntary Clean Up Agreement (see Appendix A of this document).

Regarding reference to the Scott (1991) report, this report was not the only data reviewed in the process of determining background concentrations for arsenic at the project site. As described in Table 2, of the Draft RAW, several sources were also reviewed to determine background arsenic concentrations including: Bradford et. al., (1996); Dragun and Chiasson (1991); and LBNL (2002). Ultimately, background concentrations for arsenic were based on a combination of data contained these studies, statistical trends in for arsenic concentration across the site (see Table 10 of the Phase II Site Characterization Report, Appendix N of the Recirculated DEIR), and clean-up goals used at other sites such as Santana Row.

8-13

The commenter indicates that DTSC must review a health risk assessment as part of the RAW. The commenter also suggests that based on their calculations using the maximum concentration to estimate exposure point concentrations cancer risk for the project would exceed EPA's maximum acceptable limit. Regarding the need for a health risk assessment and the potential cancer risks associated with the project, please refer to Master Response 4, Section 3.4.3, "Preparation of a Health Risk Assessment." DTSC did not require DGS to prepare a health risk assessment as part of the RAW. Further, the project would clean up on-site soils to unrestricted residential use levels and would not leave any contaminated soils in place that exceed acceptable regulatory standards. While the commenter offers results of his sense of cancer risk, no supporting calculations are provided to understand how that result was determined; therefore, no further response can be provided.

Regarding exposure point concentration, common professional risk assessment practice is to estimate exposure point concentrations as an average (or more specifically, as an upper

confidence limit on the average, referred to as the UCL95), particularly when a large number of samples have been collected to characterize a site. This methodology was approved by DTSC (see Appendix N of the Recirculated DEIR). This methodology is appropriate not only because of its approval or endorsement by DTSC, but also because it is widely used throughout California for the clean up of agricultural soils and is appropriately tailored to each project based on the specific site conditions encountered at each location. It is not appropriate to use maximum concentrations to characterize the project site, because these maximum concentrations do not occur throughout the site. For the project, extensive sampling has been performed, with over 136 surface and near surface samples collected. The maximum exposure point concentrations were only sampled in a very few locations. Therefore, use of average exposure point concentrations is more representative of conditions at the site. As stated in Section 5.3.1 of the Draft RAW, the excavation plan requires that additional, extensive sampling be done during remediation to confirm that clean up goals are met. This protocol ensures that the highest concentrations of chemicals are removed. If the samples show that elevated concentrations of chemicals remain, additional soil will be excavated and removed until the clean up goals are met and verified by DTSC. The commenter's assessment of risk does not consider that these high concentrations of chemicals will be removed. It is also inappropriate to include risks from background concentrations of naturally-occurring chemicals (such as arsenic) in an overall assessment of human health risk at a site.

- 8-14** The commenter states the excavation plan is inadequate because it would leave concentrations of dieldrin in place that exceed EPA's PRGs. Please refer to response to comment 8-13.
- 8-15** The commenter states that the DEIR does not evaluate the potential human health impacts from airborne mobilization of soil contaminants. As described in Section 4.3, "Air Quality," Impact 4.3-1, the DEIR evaluated the project's remaining air quality impacts after implementation of recommended mitigation included in the RAW and all BAAQMD control measures that were agreed to be implemented by the project applicants as an element of the project. Please refer to Master Response 4, Section 3.4.2, "Potential Health Impacts of Remediation Activities, Including Airborne Dispersal," for a discussion of the air quality mitigation recommended as part of the RAW. With implementation of recommended RAW air quality measures and all BAAQMD control measures, the DEIR concluded based on substantial evidence in the record that the project's construction-related air quality impacts would be less than significant.
- 8-16** The commenter states that the DEIR does not evaluate feasible alternative site remediation alternatives that would avoid or lessen the projects air quality or human health impacts. The commenter suggests a bioremediation alternative. With regard to the feasibility of a bioremediation alternative, please refer to Master Response 4, Section 3.4.4, "Use of Phytoremediation/Bioremediation to Remediate On-Site Soils." As described in the DEIR (Impacts 4.3-1 and 4.3-3) and in Master Response 4, the project would not result in any significant air quality or human health impacts. An alternatives analysis in an EIR is directed to focus on a range of reasonable alternatives that would reduce significant environmental effects, according to the State CEQA Guidelines Section 15126.6. Therefore, consistent with the requirements of the Guidelines, the DEIR does not need to evaluate alternatives to the proposed remediation activities, which in this case would be an option for one isolated aspect of the project implementation process, when significant effects are not caused by the proposed remediation. However, the RAW prepared at the direction of DTSC did evaluate three alternatives to remediate the project site, one of which (soil excavation) was evaluated as the preferred alternative in the DEIR and Recirculated DEIR.

- 8-17** The commenter states that the DEIR fails to quantify and evaluate the project's construction-related air emissions. The project's air quality impacts were evaluated in Section 4.3, "Air Quality," of the DEIR consistent with the requirements of CEQA and the State CEQA Guidelines. As stated on Page 4-30 of the DEIR, "The BAAQMD emphasizes implementation of effective and comprehensive control measures rather than requiring a detailed quantification of construction emissions. The BAAQMD requires that all feasible control measures, which are dependent on the size of the construction area and the nature of the construction operations involved, shall be incorporated into the project design and implemented during all construction activities (BAAQMD 1999)." By adopted policy in its CEQA guidelines, rather than require calculated estimates of construction emissions, the BAAQMD considers that a project would result in less-than-significant construction-related impacts, if it implements the BAAQMD-approved emissions control measures. The BAAQMD has had sufficient experience with construction site emissions to develop effective control measures, such that quantified thresholds for construction-related emissions are not needed to protect the environment, as long as commitment to the control measures has been made. The project's construction-related air emissions were assessed in accordance with BAAQMD CEQA guidelines and currently adopted thresholds.
- 8-18** The commenter restates his comment regarding quantification of construction emissions. Please refer to response to comment 8-17.
- 8-19** The commenter suggests that construction emissions should be quantified and compared to thresholds to other air districts. Please refer to response to comment 8-17. As described therein, BAAQMD has not adopted any construction-related emissions that are specific to the Bay Area. While the commenter suggests quantifying the project's construction-related emissions and comparing these emissions to operational thresholds, it is not BAAQMD's policy to do so and comparison of construction-related emissions to an operational threshold would not be appropriate as construction-related emissions are by their very nature short-term in duration. Further, operational emission thresholds are developed assuming a project would continuously generate emissions over a sustained period (e.g., 20-30 years) and factor in goals outlined in regional air quality attainment plans that account for some level of construction-related emissions.
- 8-20** The commenter states that because construction emissions would be significant, mitigation is required. The commenter provides a list of recommended mitigation measures. As stated on Page 4-30, the project applicants have agreed to implement all feasible BAAQMD-recommended control measures for construction-generated PM₁₀ emissions. Because the project applicants would implement all feasible control measures consistent with BAAQMD guidelines and adopted policy, the project's construction emission impacts were determined to be less than significant. To clarify the measures that would be implemented, the text of the DEIR is revised as described below. These changes are also included in Chapter 5.0, "Revisions to the DEIR and Recirculated DEIR."

Page 4-30, paragraph 2 under the heading, "Construction," is hereby revised as follows:

"The BAAQMD emphasizes implementation of effective and comprehensive control measures rather than requiring a detailed quantification of construction emissions. The BAAQMD requires that all feasible control measures, which are dependent on the size of the construction area and the nature of the construction operations involved, shall be incorporated into the project design and implemented during all construction activities (BAAQMD 1999). Implementation of BAAQMD control measures reduce fugitive dust emissions by approximately 50–75%. The project applicants have agreed to implement all feasible

BAAQMD-recommended control measures during project remediation and construction activities for construction-generated PM₁₀ emissions, as follows:

- ▶ Water all active construction areas at least twice daily.
- ▶ Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard.
- ▶ Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
- ▶ Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
- ▶ Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
- ▶ Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).
- ▶ Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.)
- ▶ Limit traffic speeds on unpaved roads to 15 mph.
- ▶ Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- ▶ Replant vegetation in disturbed areas as quickly as possible.
- ▶ Install wind breaks, or plant trees/vegetative wind breaks at windward side(s) of construction areas.
- ▶ Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph.
- ▶ Limit the area subject to excavation, grading and other construction activity at any one time.
- ▶ Use newer alternative fueled construction equipment or use add-on control devices.
- ▶ Minimize idling time (e.g., 5 minute maximum).
- ▶ Maintain properly tuned equipment.
- ▶ Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use.”

These changes do not alter the conclusions presented in the DEIR. As described above, all but one of the measures recommended by the commenter are included in the suite of mitigation that would be implemented by the project. The only infeasible measure recommended by the commenter is the establishment of a buffer zone between the site and sensitive receptors. It is assumed this mitigation is meant to establish a buffer between the area that would be graded/excavated and the surrounding residences. As described in Chapter 3, “Project

Description,” of the DEIR the entire project site would be developed and housing surrounds the project site on three sides. As such, it would be infeasible to establish a buffer on the project site.

8-21

The commenter states that the DEIR does not quantify, evaluate, or mitigate the potential impacts from Diesel Particulate Matter (DPM). The project’s impacts from toxic air contaminants (TACs), including diesel emissions, were appropriately evaluated in the DEIR (see Impact 4.3-4) consistent with the requirements of CEQA and the State CEQA Guidelines. The BAAQMD does not have adopted methodologies for lead agencies to use in quantifying impacts (e.g., health risk assessment) from diesel exhaust emissions from short-term construction activities (BAAQMD 1999, Vintz, pers. comm., 2006). Instead, BAAQMD focuses on the types of uses proposed as a guide for level of analysis with emphasis on certain projects that might result in sensitive receptors being exposed to high levels of diesel exhaust over time. This guidance applies to situations where a new or modified source of diesel TAC emissions is proposed near existing receptors and to new receptors locating near an existing source. There is no such source of toxic contaminants in residential development, such as the Proposed Project. According to BAAQMD, facilities that may have substantial diesel exhaust emissions include the following: truck stop, warehouse/distribution center, large retail or industrial facility, high volume transit center, school with high volume of bus traffic, high volume highway, and high volume arterial/roadway with high level of diesel traffic. All of these uses involve substantial truck traffic or other mobile diesel source generators. The Proposed Project would not include any of these sources, so it is recognized as a use that would not have substantial, long-term TAC from diesel emissions (which is expected, recognizing that the proposed development is residential and is similar in use to the neighborhoods in the surrounding area).

Short-term diesel vehicle use during the project’s construction phase is not an effect that can be better understood with a quantified health risk assessment (i.e., a health risk assessment would not provide substantial evidence to assist in analysis of this type of short-term effect) and the BAAQMD does not recommend the preparation of such an assessment. Risk assessment approaches involve determining additional exposure over long periods (i.e., most of a lifetime), so emissions occurring over months would not alter such health risk conclusions. Rather, the appropriate approach is to recognize the need to control construction emissions in accordance with air district requirements. This is the approach pursued in the DEIR. The control measures are listed under Impact 4.3-1 and in the RAW. These control measures would maintain the level of impact of exhaust emissions from construction equipment at less-than-significant levels.

Regarding the references cited by the commenter, the San Joaquin Valley Air Pollution Control District has not adopted a methodology for analyzing such impacts and does not recommended the completion of health risk assessments (HRAs) for construction-related emissions of TACs, with a few exceptions (e.g., where construction phase is the only phase of project) (Reed, pers. comm., 2007). Further, the Sacramento Metropolitan Air Quality Management District also does not have any current guidance on TAC emissions from mobile equipment nor does it have a threshold of significance for this equipment (Borkenhagen, pers. comm., 2006).

8-22

The commenter states that, in its analysis of operational emissions, the URBEMIS calculations omitted 1) changes made to default values and 2) only considered mobile sources not "concurrent" emissions from "area sources."

According to the BAAQMD (BAAQMD 1999), project screening may provide a simple indication of whether a project may exceed the threshold. The Lead Agency may consult Table

6 of BAAQMD's CEQA Guidelines (BAAQMD 1999) for an indication as to whether the threshold for total emissions from project operations might be exceeded. Projects approaching or exceeding the levels indicated in Table 6 should undergo a more detailed analysis. The BAAQMD recommends that a more detailed analysis (e.g., URBEMIS) be conducted for any project whose size is within 20% of the values indicated in Table 6. The value presented in Table 6 for residential uses is 320 units (~3,000 daily trips). The size of the Proposed Project is well below this value and, according to the traffic analysis prepared for this project, would result 2,159 daily trips. Thus, according to BAAQMD-recommended methodology, a more-detailed analysis would not be required for this project to ensure long-term operational emissions would not exceed the applicable thresholds. Additionally, according to the BAAQMD, the principal sources of air pollutant emissions are the motor vehicle trips generated by the project and area sources individually emit fairly small quantities of air pollutants. Despite falling below the threshold for conducting a detailed air quality analysis, URBEMIS modeling was performed and as shown in Table 4-3, long-term regional operational emissions would not exceed the BAAQMD-recommend significance thresholds for ROG, NO_x, or PM₁₀. Modeled area source emissions and default values (see default values for the "Development Alternatives," which are the same default values used for the project are shown in the modeling sheets for the URBEMIS model runs in Appendix B of the DEIR.

- 8-23** The commenter states that with the DEIR's erroneous less-than-significant finding for operational emissions, the DEIR does not identify mitigation measures. As described in response to comment 8-22, the project's operational impacts were determined to be less than significant. As a result, no mitigation measures are necessary, because CEQA requires mitigation only for significant or potentially significant effects on the environment.
- 8-24** The commenter cites the provisions of the State CEQA Guidelines regarding recirculation in Section 15088.5. No response is necessary, because no questions or new information regarding the environmental analysis were provided.
- 8-25** The commenter states that to correct for deficiencies identified in the letter, the DEIR should be recirculated. For specific responses to issues raised in the comment letter, please refer to responses to comments 8-1 through 8-24. The City recirculated the DEIR to include information regarding hazards and traffic impacts. No significant new information, as defined by Section 15088.5 of the State CEQA Guidelines, has been added to this FEIR. No new significant environmental impacts would occur that were not previously identified in the DEIR or Recirculated DEIR. No substantial increase in severity of significant effects identified in the DEIR occurred. No new feasible mitigation measure or alternative has been identified for implementation. The analysis presented in the DEIR fully complies with the requirements of CEQA and the State CEQA Guidelines. Based on the comments received on the DEIR and Recirculated DEIR and responses to those comments presented in the FEIR, a second recirculation of the DEIR is not required.
- 8-26** The commenter concludes his comments and states that recirculation of the EIR is required. Please refer to Master Response 1 and response to comment 8-25.
- 8-27** (A memorandum was attached to comment letter 8. Because this attachment addresses the environmental impacts of the DEIR, this attachment is treated as a continuation of that comment letter, beginning with this comment 8-27.) The commenter summarizes the documents that were reviewed and provides an introduction for subsequent comments in the letter. No response is necessary, because no questions or comments on the environmental analysis were raised.

- 8-28** The commenter summarizes elements of the project and past pesticide use. This summary is consistent with the information presented in the DEIR and Recirculated DEIR. No further response is necessary, because no questions or comments on the environmental analysis were raised.
- 8-29** The commenter provides a general statement that he has identified several key shortcomings of the Phase II report; however, none of these shortcomings were specifically listed in this comment. Because no specific comments on the DEIR analysis were raised, no further response can be provided.
- 8-30** The commenter states that the soil sampling protocol is insufficient. The commenter states that reliance on the school site protocol is not consistent with its intended uses. The commenter offers no evidence to support that the sampling protocol used is inadequate for residential uses, considering that the school site protocol is the most stringent sampling standard in use by EPA and DTSC (see Master Response 4, Section 3.4.1, “Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents”). While the school sampling protocol was followed and is appropriate for the existing and proposed land uses at the Project Site (see response to comment 8-4 and Master Response 2), additional samples were collected from the Project Site than were strictly required by the sampling protocol to ensure that soils at the Project Site were fully characterized. Each of the small fields at the Project Site was considered a separate agricultural field (rather than one large field as is allowed under the school sampling protocol). Because each field was considered individually, additional samples were collected above and beyond the number that would have been required if the site was considered one large field. Regarding the appropriateness of the school sampling protocol, please refer to Master Response 4, Section 3.4.1, “Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents.” In addition, it is important to note that based on information provided by UC, the quantities of chemicals used for testing at BAREC were significantly less than typically used at agricultural production sites because: 1) the areas used for research of a particular chemical were small compared to a typical agricultural field (i.e., less than 1 acre for research versus several 100 acres at an agricultural production site); and 2) the duration of the research study was short (i.e., less than 1 year compared to many years of continued application of pesticides at an agricultural production site). Further, extensive records (i.e., from 1979 to 2002) were reviewed of the types and quantities of chemicals used at the project site informing the decision on which sampling protocol should be used at the Project Site. The commenter offers no evidence that substantially larger quantities of chemicals than those uncovered during research efforts were used at the Project Site.

The commenter also states that BAREC’s status as an experimental station means that the site is “clearly conducive to more extensive (i.e. above normal) conditions from the standpoint of chemicals and water applied, both of which affect the subsurface distribution of chemicals. The commenter states that, for this reason, the school site protocol is inapplicable to BAREC.

The City disagrees with both the premise and conclusion of this comment. By its terms, the school site protocol applies to sites where pesticides and fertilizers were applied “more or less uniformly” at the site. Thus, the protocol recognizes that perfect uniformity of application is not necessary. Moreover, there is no evidence that chemical use or water use at BAREC was substantially greater; in fact, the records reviewed indicate that the quantities of pesticides and fertilizers used at BAREC were much lower than at typical agricultural sites.

- 8-31** The commenter cites conditions when the school sampling protocol should not be used and states that the Project Site meets these conditions so biased, discrete sampling would be required. Areas of the Project Site that were not used as agricultural areas (e.g., greenhouse, leach pit, etc.) have, in fact, been sampled and tested discretely as discussed in Section 2 of the Phase II report (Appendix E of the DEIR). Soil samples were collected for analysis from the former sewer leach pit, greenhouse floor, sediment trap and former evaporation pond. A soil sample was also collected from an area of distressed vegetation next to the former screen house. These additional, focused soil samples represent the biased sampling recommended by the commenter. For the agricultural fields, the school site sampling protocol was followed. This is appropriate for the existing and proposed land uses at the Project Site (see response to comment 8-4 and Master Response 4).
- The number of soil samples collected from the Project Site was substantially greater than the number required by the sampling protocol. This was done to ensure that soils at the Project Site were fully characterized. Each of the small fields at the Project Site was considered a separate agricultural field (rather than one large field as is allowed under the school sampling protocol). Because each field was considered individually, additional samples were collected above and beyond the number that would have been required if the site was considered one large field. For example, a minimum of one sample per 1/4 –acre were collected for analysis from each of the agricultural fields at the Project Site. The DTSC guidance recommends that for sites the size of the Project Site, samples should be collected on 1/2-acre centers.
- In addition, as discussed in Section 5.1.1 of the Draft RAW, a minimum of one soil sample will be collected for analysis from beneath each of the building foundations following building demolition, providing an additional measure of safety. Samples will be analyzed for asbestos (because of the age of on-site buildings), lead, arsenic, organochlorine pesticides, and petroleum hydrocarbons. Additional samples may be collected and additional analyses performed, if evidence of possible releases of contaminants to soils is observed beneath the former building/structure. If chemicals are detected above State or Federal clean up levels during this sampling, DGS is committed to remediate these contaminants to the appropriate clean up level as described in Section 5.3, “Excavation,” of the RAW.
- 8-32** The commenter states that groundwater samples should have been collected at locations where arsenic is above background levels and residual pesticide concentrations are known to exist at depth. The City disagrees with this comment. Please refer to response to comment 8-10.
- 8-33** The commenter suggests that only a small fraction of known pesticides were tested for in on-site soils and many other pesticides could be present. Please refer to Master Response 4, Section 3.4.1, “Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents,” and response to comment 8-4.
- 8-34** The commenter states that Tables 3a, 3b, and 3c of the Phase II report are not included in the DEIR. Please refer to response to comment 8-10.
- 8-35** The commenter states that arbitrary concentration estimates and the calculations regarding pesticide half lives involved inconsistent approaches in the calculations and that Tables 3a, 3b, and 3c of the Phase II report are not included in the DEIR. The commenter offers no evidence that the methodology used in the Phase II investigation is inappropriate. As discussed in comment 8-10, the results from the theoretical calculations for pesticide half-lives are typically conservative compared to real conditions (i.e., they tend to overstate potential hazard), because the theoretical calculations do not consider other site factors that contribute to pesticide degradation. Therefore, the theoretical calculations generally overestimate the amount of

pesticide remaining in the soils. This conclusion is supported by prior testing by Federal and State agencies at other agricultural sites, which typically require only testing of organochlorine (i.e., man-made organic chemicals) pesticides, because organochlorine pesticides do not degrade significantly over time. Please refer to Master Response 4, Section 3.4.1, “Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents,” and response to comment 8-10.

- 8-36** The commenter states that typical industry practice is to analyze several soil samples for the entire list of chemicals used or potentially used at the Project Site followed by more focused analyses. The commenter offers no evidence that the methodology used in the Phase II investigation is inappropriate. The 1994 DTSC guidance referenced by the commenter is used for hazardous substance release sites and is not typically used for agricultural sites because specific guidance (i.e. the EPA-DTSC school site guidance [Cal EPA-DTSC, 2002]) exists for former agricultural sites. Further, DGS and DTSC have been working closely together to characterize on-site soil contamination and identify the appropriate remediation methods to clean up on-site soils to unrestricted residential use levels consistent with the terms of the VCA. Please refer to Master Response 4, Section 3.4.1, “Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents,”
- 8-37** The commenter states that sampling should be reevaluated with a more standardized approach. Please refer to Master Response 4, Section 3.4.1, “Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents,” and response to comment 8-10.
- 8-38** The commenter states that exclusion of the pesticides from the site investigation process may undermine the public health risk assessment process and the RAW. Please refer to Master Response 4, Section 3.4.1, “Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents,” and response to comment 8-10.
- 8-39** The commenter states that an insufficient number of samples were collected from beneath the USTs. Please refer to response to comment 8-10 for a discussion of the methodology, approved by DTSC, used to characterize Project Site conditions. No evidence exists that a release has occurred at the site of the UST. The Phase II Site Characterization Report describes the removal of the two USTs. Samples were taken beneath both USTs. None of the substances stored in the USTs was found in the samples from beneath the USTs. Thus, there is no evidence that releases occurred from the USTs (Phase II Report, pp 5-6). The commenter offers no evidence that the sampling methodology used for the USTs was inappropriate; therefore, no further response can be provided.
- 8-40** The commenter states that the samples collected by ENVIRON in 2003 were evaluated for arsenic, but were not evaluated for any other constituents. As discussed in comment 8-10, Sections 1.1.4.1, 1.1.4.2, and 2.2.15 of the Phase II (Appendix E of the DEIR) discusses sampling of the former evaporation pond in detail. Samples were collected from above and below the former pond liner and analyzed for an extensive list of pesticides. Pesticide concentrations in soil samples collected above and below the liner were well below current State or Federal levels for unrestricted (residential) land use. The results for arsenic from the 1987 closure report were inconclusive because the analytical detection limit was too high. As a result, additional samples were collected and analyzed in 2003 to verify that arsenic concentrations were within acceptable background levels. The 2003 results show no evidence of elevated arsenic or leaks from the pond.

- 8-41** The commenter states that the conclusions in the Phase II report for the evaporation bed are not supported by data in the Phase II investigation and that, at a minimum, groundwater samples should have been collected beneath the evaporation bed liner. The commenter also suggests that when the samples were collected, the Project Site was not proposed for residential use; therefore, reliance on those studies is inappropriate. Please refer to response to comment 8-10 and R32-24.
- 8-42** The commenter suggests that because of the time elapsed (i.e., 30 years) between use of the leach pit and sampling, the sampled depth (i.e., 7 feet) may not adequately reflect chemical transport exacerbated by land application of wastewater below the sampled depth. The commenter suggests that groundwater be sampled and included in the Phase II. Please refer to response to comment 8-10. The sampling process included implementation of deeper borings where shallower samples indicated constituents above action levels. Once detection of constituents decreases to less than action levels, deeper samples are not needed.
- Operation of the sewer leach pit is described at page 8 of the Phase II report. Testing performed in this location is described at page 17 of the Phase II report. The commenter states that one sample was taken. This statement is incorrect. Samples were taken at 7 feet and 10 feet bgs. Test results are summarized at page 26 of the Phase II report. Substances of concern were either not detected, or were detected at concentrations below action levels. The report concludes that there is no evidence that the former sewer leach pit impacted subsurface soil and/or ground water at the site. The commenter recommends confirmation testing. Given the results of the Phase II investigation, however, the City believes that no further testing is required in this location.
- 8-43** The commenter states that preparation of a RAW is usually based on an HHRA and that the RAW was only based on an inadequate Phase II investigation. Regarding the preparation of a HHRA, please refer to Master Response 4, Section 3.4.3, "Preparation of a Health Risk Assessment." For the reasons provided in responses to comments 8-30 through 8-42 above, the Phase II prepared for the project adequately characterizes on-site soil contamination. DGS and DTSC have been working closely together to characterize on-site soil contamination and identify the appropriate remediation methods to clean up on-site soils to unrestricted residential use levels consistent with the terms of the VCA.
- 8-44** The commenter states that a HHRA was prepared by ENVIRON for the project. Please refer to Master Response 4, Section 3.4.3, "Preparation of a Health Risk Assessment," and response to comment 8-10.
- 8-45** The commenter states that the DEIR offers no explanation of why the HHRA prepared for the project has not been reviewed by DTSC. Please refer to Master Response 4, Section 3.4.3, "Preparation of a Health Risk Assessment," and response to comment 8-10.
- 8-46** The commenter states that DTSC guidelines call for the preparation of a HHRA and summarizes the elements of a HHRA. Please refer to Master Response 4, Section 3.4.3, "Preparation of a Health Risk Assessment," and response to comment 8-10.
- 8-47** The commenter restates comments regarding the adequacy of the list of pesticides that were evaluated in the Phase II. Please refer to Master Response 4, Section 3.4.1, "Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents," and response to comment 8-10.

- 8-48** The commenter restates comments regarding the methodology to eliminate pesticides from analysis. Please refer to Master Response 4, Section 3.4.1, “Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents,” and response to comment 8-10.
- 8-49** The commenter states that for the reasons above, the HHRA should be redone. Please refer to Master Response 4, Section 3.4.3, “Preparation of a Health Risk Assessment,” and response to comment 8-10.
- 8-50** The commenter restates comments regarding the need to conduct groundwater sampling. Please refer to Master Response 4, Section 3.4.1, “Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents,” and response to comment 8-10.
- 8-51** The commenter restates that the HHRA should be redone based on deeper soil samples. Please refer to Master Response 4, Section 3.4.3, “Preparation of a Health Risk Assessment,” and response to comment 8-10.
- 8-52** The commenter summarizes the analysis presented in the internal draft HHRA for the project and suggests modifications to this analysis. Regarding the need for a health risk assessment and the potential cancer risks associated with the project, please refer to Please refer to Master Response 4, Section 3.4.3, “Preparation of a Health Risk Assessment.” DTSC is not required to prepare a health risk assessment as part of the RAW. Further, the analysis presented in the DEIR and Recirculated DEIR and RAW did not rely on the analysis presented in the internal draft of the HHRA. The assertion that an HHRA is needed relies on the assumption that risk levels of contaminants would be left on the Project Site. The Proposed Project would clean up on-site soils to unrestricted residential use levels and would not leave any contaminated soils in place, so lingering health risks would not be present. Because DGS would remediate on-site soils to unrestricted residential use levels, DTSC has determined that preparation of a HHRA would not be required.
- 8-53** The commenter states that once properly characterized, should groundwater beneath the site contain elevated chemical concentrations, then complete exposure pathways associated with groundwater must be incorporated into the HHRA. Please refer to Master Response 4, Section 3.4.1, “Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents,” and response to comments 8-10 and 8-52.
- 8-54** The commenter disagrees with the analysis presented in the internal draft of the HHRA. Because the analysis in the DEIR did not rely upon the internal draft HHRA, response to issues associated with that analysis is not required. Please refer to Master Response 4, Section 3.4.1, “Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents,” and response to comments 8-10 and 8-52.
- 8-55** The commenter provides a suggestion for the analysis of a revised HHRA. Please refer to response to comment 8-54.
- 8-56** The commenter provides a suggestion for the analysis of a revised HHRA. Please refer to response to comment 8-54.
- 8-57** The commenter provides a suggestion for the analysis of a revised HHRA. Please refer to response to comment 8-54.

- 8-58** The commenter states that the methodology used in the internal draft HHRA is likely to significantly underestimate potential health risks to future site occupants. Please refer to response to comment 8-54.
- 8-59** The commenter provides a suggestion for the analysis of a revised HHRA. Please refer to response to comment 8-54.
- 8-60** The commenter summarizes the analysis of the internal draft HHRA. Please refer to Master Response 4, Section 3.4.3, “Preparation of a Health Risk Assessment,” and responses to comments 8-10, 8-52, and 8-54.
- 8-61** The commenter provides a summary of potential health risks associated with the maximum detected concentration of each chemical of concern. Please refer to Master Response 4, Section 3.4.2, “Potential Health Impacts of Remediation Activities, Including Airborne Dispersal,” for a discussion of the project’s potential health risks. Please also refer to responses to comments 8-10, 8-52, and 8-54. The commenter is offering data supporting an alternate conclusion than the results of analysis and substantial evidence presented in the DEIR. CEQA requires that a lead agency base its determination of the significance of environmental effects addressed in an EIR on substantial evidence (see State CEQA Guidelines Section 15064[f]). It is recognized that other evidence or expert opinion may suggest a different conclusion. When competing evidence exists or experts disagree about environmental conclusions, the EIR would acknowledge that other evidence or disagreement, but as long as the lead agency has substantial evidence supporting its conclusion, the disagreement does not need to change that conclusion. Section 15151 of the State CEQA Guidelines summarizes this principle: “Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts.” The topics of disagreement are presented in the relevant comment letters and the main points have been summarized in the responses to comments. The City of Santa Clara, as lead agency, will ultimately determine which conclusion is appropriate, based on the substantial evidence presented in the EIR and other information in the administrative record. Please also refer to Master Response 2.
- Regarding the commenter’s calculations of cumulative carcinogenic risks, the calculations appear to be based on maximum contaminant values. These values are not appropriate because we have sufficient data available to develop a statistical average concentration. Further, when sufficient information is available, use of a statistical average concentration is recommended by DTSC. Please refer to response to comment 8-13.
- 8-62** The commenter provides comments on the analysis presented in the HHRA. Please refer to Master Response 4, Section 3.4.3, “Preparation of a Health Risk Assessment,” and response to comment 8-54.
- 8-63** The commenter restates comments related to his concerns about flaws in the HHRA and groundwater sampling. Please refer to Master Response 4, Section 3.4.3, “Preparation of a Health Risk Assessment,” and responses to comments 8-10 and 8-54.
- 8-64** The commenter restates that the proposed clean up levels for arsenic and dieldrin are flawed. Please refer to response to comment 8-12.
- 8-65** The commenter summarizes the removal objectives of the RAW. The commenter’s summary is consistent with the information included in the DEIR and Recirculated DEIR. No further response is necessary, because no questions or new information regarding the environmental analysis were raised.

- 8-66** The commenter continues to summarize the removal objectives of the RAW. The commenter's summary is consistent with the information included in the DEIR and Recirculated DEIR. No further response is necessary, because no questions or new information regarding the environmental analysis were raised.
- 8-67** The commenter continues to summarize the removal objectives of the RAW. The commenter's summary is consistent with the information included in the DEIR and Recirculated DEIR. No further response is necessary, because no questions or new information regarding the environmental analysis were raised.
- 8-68** The commenter summarizes the source information for the arsenic clean up level described in the RAW. The commenter's summary is consistent with the information included in the DEIR and Recirculated DEIR. No further response is necessary, because no questions or new information regarding the environmental analysis were raised.
- 8-69** The commenter summarizes DTSCs guidelines for identifying arsenic screening levels. The commenter's summary is consistent with the information included in the DEIR and Recirculated DEIR. No further response is necessary, because no questions or new information regarding the environmental analysis were raised.
- 8-70** The commenter states that DTSC guidelines preclude the use of the Scott study as an indicator of arsenic background concentrations. As discussed with the DTSC in meetings related to this project, background data for arsenic could not be collected for the Project Site because the entire area surrounding the site had been historically used as orchards. Arsenical pesticides were commonly used in orchards as early as the 1920's. DTSC had encountered a similar dilemma during development of nearby Santana Row. Because no area-specific arsenic background data were available, other data and studies (such as the Scott study) were used to estimate natural background levels of arsenic in surface soils at the Project Site. The Scott (1991) report was not the only data reviewed during the process of determining background concentrations for arsenic at the project site. As described in Table 2, of the Draft RAW, several sources were also reviewed to determine background arsenic concentrations including: Bradford et. al., (1996); Dragun and Chiasson (1991); and LBNL (2002). Ultimately, background concentrations for arsenic were based on a combination of data contained these studies, statistical trends in for arsenic concentration across the site (see Table 10 of the Phase II Site Characterization Report, Appendix N of the Recirculated DEIR), and clean-up goals used at other sites such as Santana Row.

In the Draft RAW, the sampling methodology and clean up goals were identified for the Project Site. DTSC approved the public release of the Draft RAW (see Appendix N of the Recirculated DEIR). DTSC thus supports the methodology used to characterize on-site contamination and the proposed methods by which contamination would be remediated (see Appendix A of this document). This methodology is appropriate not only because of its approval or endorsement by DTSC, but also because it is widely used throughout California for the clean up of agricultural soils and is appropriately tailored to each project based on the specific site conditions encountered at each location. While DTSC would issue its final approval of the RAW once all public comments are received and responded to, DTSC has indicated through approval of the Phase II Site Characterization Report that the methodology used in characterizing on-site soils meets their requirements. DGS and DTSC have been working closely together to characterize on-site soil contamination and identify the appropriate remediation methods to clean up on-site soils to unrestricted residential use levels consistent with the terms of the VCA.

- 8-71** The commenter states that the RAW arbitrarily adopted the higher arsenic background data as the clean up level. The selection of the clean up level for arsenic is detailed in response to comment 8-12.
- 8-72** The commenter states that that either a risk-based clean up level or a properly developed background level for arsenic should be used for the clean up level. Please refer to response to comment 8-12.
- 8-73** The commenter restates comments about the arsenic clean up level. Please refer to response to comment 8-12.
- 8-74** The commenter states that the arsenic clean up level should be reevaluated through a new HHRA. Please refer to Master Response 4, Section 3.4.3, "Preparation of a Health Risk Assessment," and response to comment 8-12.
- 8-75** The commenter states that a complete analysis to support the dieldrin clean up goal has not been performed and should be reevaluated through a new HHRA. Please refer to Master Response 4, Section 3.4.3, "Preparation of a Health Risk Assessment." The clean up goal for dieldrin corresponds to a cancer risk of one in one million (1×10^{-6}), which is considered risk-protective for unrestricted land use by both the DTSC and USEPA. The commenter offers no evidence that the clean up goal used in the analysis is inadequate; therefore, no further response can be provided.
- 8-76** The commenter states that the proposal in the RAW to use statistical averages to determine the extent of excavation does not ensure protection of human health across the site. Please refer to response to comment 8-13 and 8-14. The commenter offers no evidence that the methodology in the RAW is not protective of human health; therefore, no further response can be provided.
- 8-77** The commenter restates comments regarding dieldrin and arsenic clean up goals. Please refer to Master Response 4, Section 3.4.1, "Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents," and responses to comments 8-12 and 8-75.
- 8-78** The commenter states that the RAW should establish more stringent removal criteria. Please refer Master Response 4, Section 3.4.1, "Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents," and responses to comments 8-12 and 8-75.
- 8-79** This commenter states that the dieldrin concentrations at sampling location F3-A-0.5 and F3-B-0.5 are significantly above the PRG. The dieldrin concentrations at these two locations are 42 and 37 ug/kg, respectively. The PRG is 30 ug/kg, which corresponds to a cancer risk of one in one million (1×10^{-6}). DTSC advises that when concentrations slightly exceed a PRG, health risks associated with these concentrations should be evaluated in comparison to DTSC's acceptable risk range. The dieldrin concentrations at these two locations are not significantly above the PRG. The maximum cancer risk from these two locations corresponds to a cancer risk of 1.3 in one million (1.3×10^{-6}), which is within the DTSC's acceptable risk range (1×10^{-6} to 5×10^{-6}) and as such, no remediation is required at these two locations.
- 8-80** The commenter summarizes his comments regarding arsenic and dieldrin clean up levels. Please refer to Master Response 4, Section 3.4.1, "Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents," and responses to comments 8-12 and 8-75.

- 8-81** The commenter states that the on-site well should be properly abandoned and groundwater samples should be collected to characterize the deeper aquifer. The on-site well has been properly abandoned in accordance with State and local requirements. Regarding groundwater sampling, please refer to response to comment 8-10.
- 8-82** The commenter states that the DEIR is not adequate for the reasons stated in the comment letter. Please refer to response to comment 8-1 through 8-81. Regarding disagreement with the EIR's conclusions, please refer to Master Response 2.
- 8-83** The commenter states that the project would leave contaminated soils in place and, therefore, the RAW would need to identify a process for notifying future residents of the presence of contamination. As identified in the RAW and the DEIR, the project would clean on-site soils to unrestricted residential use levels through excavation and replacement of on-site soils. No soils would contain chemical concentrations above established clean up levels; therefore, notification to future residents or other risk management measures would not be required.
- 8-84** The commenter outlines the elements of a risk management plan that should be prepared for the project. As identified in the RAW and the DEIR, the project would clean on-site soils to unrestricted residential use levels. No chemicals above established clean up levels would remain in on-site soils; therefore, notification to future residents or other risk management measures would not be required.
- 8-85** The commenter states the risk management plan should be recorded with DTSC. As identified in the RAW and the DEIR, the project would clean on-site soils to unrestricted residential use levels. No chemicals above established clean up levels would remain in on-site soils; therefore, notification to future residents or other risk management measures would not be required.
- 8-86** The commenter restates his opinion of the shortcomings of the DEIR. No response is necessary, because no questions or new information regarding the environmental analysis were raised.
- 8-87** The commenter restates his opinion of the project's inadequate site characterization. Please refer to response to comment 8-4.
- 8-88** The commenter restates his comment that an inadequate assessment of human health risks was provided in the DEIR. Please refer to Master Response 4, Section 3.4.3, "Preparation of a Health Risk Assessment."
- 8-89** The commenter restates his comment that the DEIR provided an inadequate and inconsistent approach to establishing clean up criteria. Please refer to response to comment 8-6. As described in response to comment 8-6, confirmation sampling of on-site soils will be performed to ensure that on-site soils meet established clean up goals. Therefore, irrespective of the soil clean up methodology used, soils at the site would meet DTSC clean up standards.
- 8-90** The commenter restates his comment that the DEIR provided an inadequate and inconsistent approach to establishing clean up criteria in support of estimating the extent of soil contaminant removal. Please refer to responses to comments 8-12 and 8-75.

- 8-91** The commenter restates his comment that the DEIR provides inadequate risk management measures. As identified in the RAW and the DEIR, the project would clean on-site soils to unrestricted residential use levels. No chemicals above established clean up levels would remain in on-site soils; therefore, notification to future residents or other risk management measures would not be required.
- 8-92** The commenter provides a summary of the project. No response is necessary, because no questions or new information regarding the environmental analysis were raised.
- 8-93** The commenter states that the analysis of construction-related impacts is flawed for the reasons described in comments 8-94 and 8-95, as well as in earlier comments 8-17 and 8-20. Please refer to responses to comments 8-7, 8-20, 8-94, and 8-95.
- 8-94** The commenter states that the DEIR analysis was flawed because construction-related emissions were not quantified. Please refer to response to comment 8-17.
- 8-95** The commenter states that the DEIR analysis was flawed because BAAQMD control measures have not been recommended. Please refer to response to comment 8-20.
- 8-96** The commenter states that although a threshold has not been adopted by BAAQMD, there are options for the lead agency to establish thresholds. Please refer to response to comment 8-17.
- 8-97** The commenter states that the URBEMIS model can estimate construction-related emissions. No response is necessary, because no questions or new information regarding the environmental analysis were raised.
- 8-98** The commenter offers an analysis of construction-related emissions. The commenter is offering data supporting an alternate conclusion than that provided in the DEIR. CEQA requires that a lead agency base its determination of the significance of environmental effects addressed in an EIR on substantial evidence (see State CEQA Guidelines Section 15064[f]). It is recognized that other evidence or expert opinion may suggest a different conclusion. When competing evidence exists or experts disagree about environmental conclusions, the EIR must acknowledge that other evidence or disagreement. However, as long as the lead agency has substantial evidence supporting its conclusion, the disagreement does not need to change that conclusion. Section 15151 of the State CEQA Guidelines summarizes this principle: “Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts.” The topics of disagreement are presented in the relevant comment letters and the main points have been summarized in the responses to comments. The City of Santa Clara, as lead agency, will ultimately determine which conclusion is appropriate, based on the substantial evidence presented in the EIR and other information in the administrative record. Please also refer to Master Response 2.
- Regarding the analysis included in the appendix, the commenter suggests comparing the results to operational thresholds, which have been developed to address the long-term emissions associated with the project. This is not appropriate because the model estimates short-term, construction-related emissions and, as such, the short-term emissions estimates are not comparable to a long-term standard. The BAAQMD does not have any adopted construction-related emission standards. Therefore, an analysis of quantified construction-related emissions, while interesting, would not be meaningful in the context of an impact analysis.
- Regarding the information included in the commenter’s modeling appendix, as shown on page 1 of the modeling output sheet, the construction-generated emissions were developed assuming the project was unmitigated. Therefore, it appears, without any other supporting evidence, that

this analysis did not assume that any of the BAAQMD-recommended mitigation measures would be implemented during project construction. This analysis is not correct because as described on page 4-30 of the DEIR, the project applicant would implement all feasible BAAQMD-recommended control measures at the Project Site as an element of the project description and would be monitored through the project's Mitigation Monitoring Program. Therefore, an analysis that does not take this into account does not accurately reflect the impacts of the project.

- 8-99** The commenter states that based on his analysis, significant impacts would occur and the DEIR should be revised. Please refer to response to comment 8-98.
- 8-100** The commenter states that because construction emissions would be significant, mitigation would be required. The commenter provides a list of recommended mitigation measures. Please refer to response to comment 8-20, which summarizes the project commitment to implement mitigation measures recommended by the BAAQMD.
- 8-101** The commenter states that mitigation identified in comment 8-100 is feasible. Please refer to response to comment 8-100.
- 8-102** The commenter describes options for diesel retrofit devices and the effectiveness of those devices. Please refer to response to comment 8-20.
- 8-103** The commenter provides a list of BAAQMD control measures and states that all these measures should be included in the DEIR. Please refer to response to comment 8-20.
- 8-104** The commenter states that the DEIR should be revised to include the construction exhaust and fugitive dust mitigation measures. Please refer to response to comment 8-20.
- 8-105** The commenter generally summarizes potential health risks of TACs. No response is necessary, because no questions or new information regarding the environmental analysis were raised.
- 8-106** The commenter summarizes BAAQMD CEQA guidelines regarding diesel exhaust particulates. Please refer to response to comment 8-21.
- 8-107** The commenter states that sensitive receptors are located adjacent to the Project Site and suggests that these receptors could experience potential health impacts from diesel particulate matter. Please refer to response to comment 8-20 and Master Response 4, Section 3.4.3, "Preparation of a Health Risk Assessment."
- 8-108** The commenter states that the DEIR should be revised to include a particulate matter concentration analysis and an estimate of potential excess cancer risk and acute health risks. In its CEQA guidelines, the BAAQMD uses a policy approach for maintaining particulate-related impacts at less-than-significant level that requires commitment to feasible control measures, rather than requiring calculated estimates. The DEIR analysis is consistent with BAAQMD requirements. Please also refer to response to comment 8-20 and Master Response 4.
- 8-109** The commenter states that the operation-emissions calculations provided in Appendix B do not include the changes made to default values. Please refer to response to comment 8-22.

- 8-110** The commenter states that the DEIR underestimates operational emissions because it does not quantify area sources. Area sources were considered in the analysis because they are an element of the URBEMIS model. Please also refer to and response to comment 8-22. In consideration of mobile and area sources, the project's impacts were determined to be less than significant.
- 8-111** The commenter states that because of the underestimation of impacts, the DEIR does not identify mitigation. Please refer to responses to comments 8-22 and 8-110.
- 8-112** The commenter provides examples of effective mitigation for operational emissions. As described in Impact 4.3-3 of the DEIR, the project would not result in any significant long-term operational impacts. As such mitigation would not be required.
- 8-113** The commenter states that the DEIR should be revised to include feasible operational mitigation measures. The project's Mitigation Monitoring Program will include all recommended mitigation measures. No additional mitigation measures are required.

Frank R. Freedman, PhD
Senior Scientist
Envirocomp Consulting
April 24, 2006

Ms. Gloria Sciara
Project Manager
City of Santa Clara, Planning Division
1500 Civic Center Drive
Santa Clara, CA 95050

Re: Comment on Draft Environmental Impact Report (DEIR) for BAREC property

Dear Ms. Sciara,

Thank you for your efforts in developing the Draft Environmental Impact Report for the proposed housing construction project on what was previously the BAREC agricultural site. I have read through the DEIR and commend you on presenting a clearly stated plan.

9-1

I was contacted by the group Valley Initiative for Values in Agricultural (www.savebarec.org) to review the DEIR and to offer my scientific opinions on the air and soil pollution mitigation plans proposed in it. I am a senior scientist at Envirocomp Consulting (Fremont, CA) and the company has donated time for me to review the DEIR. I have studied environmental sciences for over 15 years, taught courses in air pollution meteorology at San Jose State University, and have worked as a consulting scientist at Envirocomp for approximately a year and a half. Other scientists at Envirocomp with whom I have consulted in forming my comments have over 30 years of experience in the field of air pollution meteorology and engineering.

9-2

My comments here pertain to the air pollution impacts of the proposed activities. After reviewing the DEIR, I have the following comments:

- 1) Regarding *Impact 4.3-1: Construction and Remediation-Related Air Emissions* (Page 4-30 of DEIR), it is stated that construction related air pollution impacts would be less-than-significant because, in part, "the developers would implement all feasible BAAQMD PM₁₀ control measures to control construction related dust-emissions at the site". While it is likely true that these control measures would, on most days, reduce dust emissions to levels not requiring further mitigation, it is not stated in the DEIR how the implementation of such measures would be enforced. Please address this in the final report.
- 2) Regarding *Impact 4.3-1: Construction and Remediation-Related Air Emissions* (Page 4-30 of DEIR), it is stated that construction related air pollution impacts would be less-than-significant since, in part, emissions of CO and ozone precursors "are included in the emission inventory that is the basis for regional air quality plans, and are not expected to impede attainment of ozone or maintenance

9-3

9-4

of CO standards in the Bay Area”. This statement, however, contains no reference to BAAQMD documentation that lists what is and what is not included in the emission inventory used to base its air quality plan. It is therefore difficult for the reader to check the validity of this statement. Please include the relevant citation and/or documentation in the final report.

9-4
Cont'd

- 3) Regarding *Impact 4.3-4: Exposure of Sensitive Receptors to Toxic Air Contaminants* (Page 4-32 of DEIR), it is stated that exposure to toxic contaminants for diesel exhaust would be less-than-significant a) because the use of mobilized equipment would be temporary and not atypical of similar activities at other construction sites and b) because of “the dispersive properties of diesel PM”. While one may *suspect* a less-than-significant impact based on these reasons, neither of them, however, provides a rigorous means of substantiating a claim of “less than significant” exposure. Instead a formal analysis, through modeling and risk assessment, should be performed to substantiate this. Please provide this in the final report.

9-5

Thank you for taking my concerns into consideration. I look forward to your response.

Sincerely,

Frank Freedman
1505 De Rose Way, #35
San Jose, CA 95126
(408) 291-0933
freedman@envirocomp.com

LETTER 9

Frank R. Freedmand
(on behalf of Save BAREC)
April 21, 2006

- 9-1** The commenter makes general references to the DEIR. No response is necessary, because no issues related to the environmental impacts of the project were raised.
- 9-2** The commenter provides an introduction to himself and professional background. No response is necessary, because no issues related to the environmental analysis were raised.
- 9-3** Regarding page 4-30, Impact 4.3-1, Construction and Remediation-Related Air Emissions, the commenter states that the DEIR does not state how BAAQMD measures quoted would be enforced. As indicated on page 4-30, the project applicant has agreed as part of the project proposal to implement the BAAQMD measures. The City would enforce this provision through adoption of a Mitigation Monitoring Program if the Proposed Project is approved.
- 9-4** Regarding page 4-30, Impact 4.3-1, Construction and Remediation-Related Air Emissions, the commenter states that although the DEIR states that construction related air pollution impacts would be less than significant, there is no reference to the documentation that lists what is and what is not included in the BAAQMD emission inventory used to base its air quality plan. The DEIR contains the in-text citation reference “(BAAQMD 1999),” which refers to the BAAQMD CEQA Guidelines: Assessing Air Quality Impacts of Projects and Plans (please see Section 8.1, “Printed References”). The reference may be found at the BAAQMD web page, http://www.baaqmd.gov/pln/ceqa/ceqa_guide.pdf. The reference was also included in the materials made available for public review during the circulation of the DEIR. The reference is included in the project-related reference materials available at the City
- 9-5** The commenter states that the DEIR conclusion that toxic air contaminants (TAC) impacts are less than significant is based on assumptions, not analysis. The commenter recommends revising the DEIR to include formal analysis through modeling and risk assessment. Preparation of a formal health risk assessment is not necessary or required, as explained in the discussion supporting Impact 4.3-4, because potential health effects from diesel fuel use, like other toxic air contaminants, are a long-term phenomenon, and the use of diesel trucks on the site for construction would be a short-term event (i.e., only the construction period). For instance, health risk assessment modeling methodologies require exposure estimates over a 70-year life span, while the exposure duration of diesel trucks involved in construction on the site would be a matter of months. Given the short duration of exposure, the preparation of a formal health risk assessment would be expected to lead to a less-than-significant impact result. Further, the BAAQMD does not currently have recommended methodologies for Lead Agencies to use in quantifying impacts (e.g., health risk assessment) from diesel exhaust emissions from short-term construction activities (BAAQMD 1999, Vintz, pers. comm., 2006). However, BAAQMD does note that particular attention should be paid to projects that might result in sensitive receptors being exposed to high levels of diesel exhaust, which applies both to situations where a new or modified source of emissions is proposed near existing receptors and to new receptors locating near an existing source. According to BAAQMD, facilities that may have substantial diesel exhaust emissions include the following: truck stop, warehouse/distribution center, large retail or industrial facility, high

volume transit center, school with high volume of bus traffic, high volume highway, and high volume arterial/roadway with high level of diesel traffic. The Proposed Project would not include any of these sources. Nonetheless, control measures listed under Impact 4.3-1 would also reduce exhaust emissions from construction equipment.



www.coryneighborhood.org
San Jose, California

RECEIVED

APR 21 2006

City of Santa Clara Planning Division
Gloria Sciara, AICP, Project Manager
1500 Warburton Ave.
Santa Clara, CA 95050

City of Santa Clara
Planning Division

The Cory Neighborhood Association (CNA) has prepared this response in regard to the development of the property located at 90 N. Winchester Blvd., otherwise referred to as BAREC. We adamantly oppose the proposed development of this property because it will significantly and detrimentally impact our community. The proposed development will exacerbate traffic issues that already plague our neighborhood and the DEIR has not addressed these issues, nor the issues that come with increased congestion, such as noise pollution, litter and negative quality of life.

10-1

The Cory Neighborhood Association represents approximately 1400 households in San Jose, bordered on the west by Winchester Blvd., on the north by Newhall St., on the east by Bascom Ave. and Interstate 880, and on the south by Forest Ave. For a detailed map of our neighborhood please visit <http://www.coryneighborhood.org/map.html>

10-2

After reviewing the Draft Environmental Impact Report (DEIR) prepared by Fehr & Peers for EDAW, Inc., it is the conclusion of the Cory Neighborhood Association that the impact to our neighborhood was greatly underestimated, and in some cases not even considered as part of the DEIR. We feel the current draft EIR primarily addresses the concerns of Santa Clara residents and does not include a fair assessment of the impact to San Jose residents.

10-3

The CNA believes strongly that the City of Santa Clara cannot make an informed and well-considered decision about the proposed development of this property based on the current DEIR. This DEIR does not include an impact report that represents a fair assessment of the real traffic situation as it currently pertains to the Westfield Valley Fair and Santana Row shopping malls, studied on different days and times.

10-4

We believe that further traffic study should be done to assess the impact of traffic cutting through our neighborhood because of the proposed intersection changes on Winchester Blvd. This DEIR has severely underestimated the degree of impact that the development will have on the San Jose residents living near the property.

10-5

The following pages outline those sections of the DEIR that we feel are lacking an unbiased assessment of the real impact this development will have on our community.

10-6

Signed

Date: 21 April 06

Ken Braly, President, Cory Neighborhood Association
for the Cory Neighborhood Association Board of Directors

Appendix (J) Transportation Impact Analysis

1. We are concerned about the additional traffic in our neighborhood due to more drivers cutting through our neighborhood to avoid the increased congestion on Winchester Blvd.

Fehr & Peers chose 16 intersections for the traffic impact analysis; two of these intersections directly border Cory Neighborhood. The proposed property development includes only two access points to the BAREC property, both of which open up to Winchester Blvd. Although the impact reports include Winchester Blvd./Hedding St. and Winchester Blvd./Newhall St. intersections, there are no impact reports for the following intersections within our neighborhood:

- 1) Forest Ave./Monroe St.
- 2) Forest Ave./Redwood Ave.
- 3) Hedding St./Monroe St.
- 4) Newhall St./Monroe St.
- 5) Newhall St./Bascom Ave. (Washington St.)

The CNA has a history of addressing traffic-related issues in our neighborhood with the City of San Jose. Our neighborhood already experiences a large number of drivers cutting through our neighborhood—not only on main routes like Newhall St. and Hedding St., but also on smaller residential streets like Sunny Vista and Cherrystone Drs.—to reach Interstate 880 and/or major thoroughways (Bascom Ave., Winchester Blvd., Newhall St.).

Due to the lower traffic standards for the Winchester Blvd./Stevens Creek Blvd. intersection (designated CMP), this intersection will get even further congested, with traffic backing up toward the property's exits. It backs up there today on certain days and times not studied in the DEIR.

Drivers headed south on Winchester towards Interstate 280 will likely look for a way to avoid the congestion. One alternative, which many drivers take today, is to cut through to the Bascom Ave. on-ramp to I-880 south. Also, traffic bound for Interstate 880 north would avoid the Winchester and Stevens Creek congestion by heading down Forest Ave. or Hedding St. to Bascom.

This would mean significant impacts to all the intersections listed above with a multitude of ways in which traffic could cut through our neighborhood.

In addition, there are an increasing number of people using the Bascom Ave. corridor (to Forest Ave. and Hedding St.) for access to the Valley Fair shopping mall. This has been exacerbated by the continual buildup of cars exiting Interstate 280 north towards Interstate 880 north to reach the mall via Stevens Creek Blvd. This congestion inadvertently forces would-be shoppers to use the surrounding streets.

10-7

10-8

Appendix (J) Transportation Impact Analysis (continued)

11. We are concerned that the projected traffic numbers in the EIR are too small, and that the impact on our neighborhood is thus underestimated.

(1) The impact calculations based on "Scenario 1: Existing Conditions" as defined (Page 4) do not accurately reflect the baseline traffic generated by the Westfield Valley Fair shopping mall. The assumption (Page 7, Existing Traffic Volumes) is that *"Peak conditions usually occur during the morning and evening commute periods from 7:00 am and 9:00 am and from 4:00 pm to 6:00 pm respectively."* This is a serious distortion from the reality of living next to a major shopping center. Everyone who lives in Cory Neighborhood knows that traffic generated by the Valley Fair mall occurs all day long and is even higher during the Christmas shopping season or other holidays, on weekends, and during the regular workweek from 4:00 pm until mall closing. This non-locally generated traffic that comes from all over the San Francisco Bay Area spills onto surrounding city streets once most people get off work around 5:00 pm.

10-9

Though there is already a huge spill-over parking problem on the streets surrounding the Valley Fair mall, this traffic is not reflected in the baseline calculations for the "Existing Conditions." During peak commute hours people are passing through city streets, yet during prime shopping hours, weekends, and holidays, cars are circulating the mall looking for parking. This fact, in conjunction with cars using the Forest Ave. "back side" access to the mall, would greatly change the baseline conditions for the streets surrounding the mall.

Although reference to the impact of the traffic generated by the shopping mall was noted (Page 16, Field Observations), it is dismissed since it did not impact the AM or PM peak hours as defined by Fehr & Peers (Page 7, Existing Traffic Volumes) and consequently does not appear in the baseline impact analysis. We feel this is an oversight.

(2) We question the volume of additional traffic into and out of the project. For example, Table 6 in Appendix J says that 85 trips will exit the project during the 2-hour AM peak period. With 120 single-family homes, presumably with working adults, and 165 senior units, 85 outbound trips seems unrealistically low.

We understand that the total number of trips per day is derived from an industry-accepted source: the Institute of Transportation Engineers (*Trip Generation*, Sixth Edition, dated 1997). We are curious whether recent field observations validate these numbers or to what extent the numbers have changed in the more recent seventh edition of the same book. We are also interested in how the 2,159 proposed trips daily break down to 85 outbound in the AM peak period and 106 inbound in the PM peak period.

10-10

(3) We question the validity of the trip assignment numbers. For example, Panel 7 on Figure 8 shows that in neither the AM nor PM peak period, no drivers from the

10-11

project will turn north on Bascom from Forest. Given our contention that drivers will use Forest to get to the Bascom/I-880 interchange, this seems unrealistic. (Not to mention point I above, that increased traffic here will result not only from BAREC drivers but also from drivers avoiding congestion at the Stevens Creek/Winchester Blvd. intersection.)

10-11
Cont'd

Appendix (J) Transportation Impact Analysis (continued)

III. We are concerned that the traffic counts in the EIR are too low, because they are based on outdated information. This leads to the underestimation of the traffic impact on our neighborhood.

The traffic counts for the DEIR (Page 7, Existing Traffic Volumes) "were obtained from the Cities of Santa Clara and San Jose. New peak-hour traffic counts were conducted in May, September and October 2004, August 2005 to supplement this information." We feel these traffic figures are already outdated and do not address the growing number of people driving to this area due to the increasing popularity of Valley Fair. The Valley Fair shopping center is the largest west-coast shopping center operation that the Westfield Group has in its portfolio, reporting 390 million in annual retail sales for 2005 with 259 retailers occupying the premises¹.

Santana Row has also been increasing in popularity as a shopping hub. Federal Realty Trust has reported very positive results from their investment there in subsequent years². With the completion of phase III in September 2004 (Cinearts theater), substantially more driving congestion was added to Winchester Blvd. and the surrounding streets. These facts were not included in the 2003 traffic count data. With the completion of phase IV of the property, an additional 96 town homes and 160 flats on building 7, selling throughout 2005 to mid-2006, will further highlight the inaccuracy of the traffic data collected in early 2005.

The use of background traffic volume figures from 2000/2001 (Page 19) is inadequate given the special circumstance of two major shopping centers growing in popularity. An increase in office space vacancy (the justification for using these numbers) is contradicted by the successes reported at both Valley Fair and Santana Row^{1,2}. In both cases, the number of retailers has gone up and real estate sales have increased since 2000/2001.

Due to the congestion already existing at this location, further significant development of the BAREC property will force traffic toward our neighborhood to avoid the congestion associated with the shopping centers.

¹ Westfield Group Annual Report 2005

² Federal Realty Trust Annual Press Release 2004, 2005 respectively.

10-12

Cory Neighborhood Association DEIR Response

Appendix (K) Potential Neighborhood Impact

We are concerned because the potential neighborhood impact report is very thorough for the Santa Clara neighborhood immediately surrounding the property, but doesn't even mention any impact for the San Jose residents right across the street.

Although the proposed thoroughfares of the property clearly open up to the Cory Neighborhood vicinity, the Cory Neighborhood is completely ignored in all sections of the impact report.

We find this to be completely inappropriate, given the fact that traffic leaving the proposed development by either going straight (east on Forest Ave.), or by making a left turn (north onto Winchester Blvd.), would result in a direct impact to our neighborhood, while traffic making a right turn (south onto Winchester Blvd.) would have an indirect impact due to other drivers avoiding the congestion. There are no studies contained within this report evaluating the impact of increased traffic congestion, noise pollution, litter, etc., on our neighborhood.

10-13

LETTER 10

Cory Neighborhood Association

Ken Braly

President

April 1, 2006

10-1

The commenter expresses opposition to the project and states that the DEIR did not address traffic issues in their neighborhood. The DEIR and Recirculated DEIR (see Section 4.11, “Transportation and Circulation”) provided a comprehensive analysis of the project’s traffic impacts on the surrounding roadway network including preparation of a separate neighborhood analysis for the neighborhood surrounding the Project Site, including roadways adjacent to or within the Cory Neighborhood. As described therein, most project and cumulative traffic-generated impacts to local roadways, freeways, and neighborhood streets, would be less than significant, because the project’s trips would not cause the exceedance of any adopted thresholds of significance. The project would cause five intersections to operate unacceptably under cumulative conditions (see cumulative impacts, page 6-2 of the Recirculated DEIR). Mitigation is recommended to reduce these impacts to a less-than-significant level. However, implementation of the mitigation is uncertain, because it is not subject to the City of Santa Clara’s control and is within another agency’s jurisdiction. Therefore, for purposes of CEQA, the Recirculated DEIR concluded that these impacts would be significant and unavoidable.

Appendix K and Impact 4.10-9 in the Recirculated DEIR present an analysis targeted specifically at assessing “livability” issues for neighborhoods as a result of traffic on neighborhood streets. Please also see Section 4.4, “Noise,” in the DEIR and Section 4.10, “Transportation and Circulation,” of the Recirculated DEIR. The scope of the traffic analysis was reviewed with staff of the cities of Santa Clara and San Jose prior to preparation of the DEIR.

Detailed discussions of the Proposed Project’s traffic impacts on the Cory Neighborhood are not provided in the DEIR or Recirculated DEIR, because the calculated volume of additional traffic added by the project in this area (6 – 67 trips) would be very small and would not lead to significant traffic or quality of life effects to this area. The DEIR and Recirculated DEIR used professionally accepted Institute of Transportation Engineers (ITE) standards for the traffic analysis. The Cory Neighborhood is northeast of the Project Site and north of Valley Fair Mall, generally bounded by Forest Avenue, Winchester Boulevard, Newhall Street, Bascom Avenue, and I-880, as depicted on the neighborhood association’s website map. The traffic analysis in the Recirculated DEIR, Appendix J, includes evaluation of three major intersections on the western border of the Cory Neighborhood (see Figure 8 in Appendix J of the Recirculated DEIR): Forest/Winchester, Hedding/Winchester, and Newhall/Winchester.

The number of project trips that would turn east on Forest Avenue, east on Hedding Street, or east on Newhall Street would be the trips that would be heading in a direction to potentially travel into or through the Cory Neighborhood. The expected numbers for these trips are very small. As depicted in Figure 8 of Appendix J, at peak hour, the Recirculated DEIR indicates that 12 – 16 total trips would travel on Forest Avenue east of Winchester Boulevard; 5 – 13 trips would travel on Hedding Street east of Winchester Boulevard; and 2 – 4 trips would travel on Newhall Street east of Winchester Boulevard. Not all of these trips east of Winchester Boulevard would enter the residential area of the neighborhood (but rather would

stay on the major through streets), so the actual number of trips traveling on the residential streets of the neighborhood would be reasonably expected to be less than the range shown in Figure 8. The range of trips reflects consideration of either a.m. or p.m. peak hours and trips traveling both to and from the Project Site.

Appendix K in the Recirculated DEIR, Potential Neighborhood Impacts, identified thresholds of significance for increased neighborhood traffic from other cities with roadway networks similar to the City of Santa Clara (see Table 4 in Appendix K). Based on this analysis, the City's traffic consultant recommended the following significance thresholds for traffic impacts on neighborhood streets: 1,500 total vehicles per day on local residential streets or 2,800 total vehicles per day on residential collector streets; and 150 additional vehicles per day from the project alone. (See Recirculated EIR, Appendix K.) The analysis addressed potential traffic impacts in the Cory Neighborhood. The analysis concludes impacts on residential streets in this neighborhood will not be significant. (See Recirculated DEIR, Impact 4.10-9.)"

- 10-2** The commenter provides an introduction to the Cory Neighborhood Association. No response is necessary, because no questions or new information regarding the environmental analysis were raised.
- 10-3** The commenter states that the traffic impacts to the Cory Neighborhood were greatly underestimated and that it does not include a fair assessment of the impact to San Jose residents. The scope of the analysis presented in the DEIR was reviewed by the City of San Jose to confirm the roadways that should be evaluated as part of the DEIR and was evaluated using San Jose thresholds for roadways within its jurisdiction.. The analysis includes intersections in San Jose. Based on the data in Appendix J of the Recirculated DEIR, the neighborhood traffic impacts in the Cory Neighborhood would not be significant, as discussed in the response to comment 10-1.
- 10-4** The commenter states that the DEIR did not present a fair assessment of the traffic situation related to Westfield Valley Fair and Santana Row. The analysis presented in the DEIR evaluated the project's transportation impacts consistent with the methodology of the City of Santa Clara, Santa Clara Valley Transportation Authority (VTA), County of Santa Clara, and City of San Jose. It included consideration of existing and future traffic from surrounding uses, including Valley Fair Mall and Santana Row. In addition, the City recirculated the transportation section of the DEIR to address comments received that stated that the DEIR should have included the recently proposed Valley Fair mall expansion in the cumulative scenario at the time the DEIR was published. Following the close of the public comment period, the City became aware of these projects and decided to revise the traffic analysis on July 9, 2006. Please refer to Master Response 1 and 3 (see Section 3.3.1, "Methodology Used in Preparation of the EIR Traffic Impact Analysis"). Also, as discussed in the response to comment 10-1, neighborhood traffic impacts on the Cory Neighborhood would not be significant, based on data presented in Appendix J of the Recirculated DEIR.
- 10-5** The commenter states that the traffic analysis should include an assessment of the neighborhood impacts to the Cory Neighborhood as a result of the proposed intersection changes on Winchester. A detailed neighborhood analysis was prepared for the project with and without the proposed improvements to the Winchester Boulevard/Forest Avenue intersection. A copy of this analysis was included as Appendix K of the DEIR. This analysis focused on the traffic-related impacts that would occur to neighborhood streets. The analysis identified appropriate thresholds of significance related to livability, rather than simply intersection congestion in accordance with ITE standards. As discussed in the response to

comment 10-1, project traffic expected in the vicinity of the Cory Neighborhood would not reach the thresholds for significant impact. Please also refer to Master Response 3.

10-6

The commenter provides an introduction to the remaining comments in the letter. No response is necessary, because no questions or new information regarding the environmental analysis were raised.

10-7

The commenter states that the DEIR does not provide an analysis of five intersections that are within the Cory Neighborhood. The intersections that were selected for analysis were chosen based on whether the intersection would receive 10 or more peak-hour trips as set forth in the Valley Transportation Authority (VTA) guidelines.. Once intersections met this threshold, they were selected for additional analysis and the selected intersections were reviewed and approved by staff of the cities of Santa Clara and San Jose. The cities also reviewed the trip assignments for local roadways and did not request further analysis.

As discussed previously in response to comment 10-1, the numbers of peak-hour trips traveling east of Winchester Boulevard on the edges of the neighborhood (on Forest Avenue and Newhall Street) or through a major street crossing the neighborhood (Hedding Street) are small. At the point of greatest project contribution, 12 – 16 additional peak hour trips would travel on Forest Avenue east of Winchester, 5 – 13 peak hour trips would travel on Hedding Street, and 2 – 4 peak hour trips would travel on Newhall Street. These contributions would not result in substantially changed peak-hour congestion in the neighborhood. Impacts on Corey Neighborhood streets were considered.

10-8

The commenter states an opinion about how traffic would be affected on roadways surrounding the Project Site and suggests that not all times when traffic has been observed to back up have been evaluated in the DEIR. The traffic analysis presented in the DEIR and Recirculated DEIR evaluates the a.m. and p.m. peak hours because these periods generally represent the most congested time periods during a normal day. The peak hours evaluated in the DEIR and Recirculated DEIR were analyzed consistent with VTA and City of Santa Clara, County of Santa Clara, and City of San Jose standards. There are many conditions that can influence traffic on local roadways including holidays, construction, and large events. These conditions are generally short-term and do not have a permanent effect on roadway operation. As such, it is important for the analysis in the DEIR to present the impacts that would occur during normal operations and are consistent with ITE standards. Further, Fehr & Peers (traffic engineering firm responsible for the analysis) observed local traffic conditions for studied roadways (including roadways near Valley Fair Mall) and incorporated this information into the analysis. The analysis presented in the DEIR provides decision-makers with information that enables them to understand the reasonably foreseeable impacts of the project. Because the comment contains no specifics about how the analysis in the DEIR or Recirculated DEIR is inadequate, no further response can be provided.

10-9

The commenter expresses concern that the projected traffic numbers in the DEIR are too small and that the impacts to the Cory Neighborhood are underestimated. The commenter stated that the peak hour conditions identified in the DEIR do not accurately represent the existing environment and that traffic cuts through the neighborhood at all hours of the day and is higher during holidays because of the mall. The City prepared the Recirculated DEIR in substantial part to consider impacts resulting from the expansion to the Valley Fair Mall. Consequently, all of the cumulative impact analyses were updated to reflect the mall expansion proposal. The DEIR and Recirculated DEIR evaluate the potential impact of adding traffic from the proposed Santa Clara Gardens Development project. The project will not affect potential cut-through traffic in the Cory Neighborhood, such as trips to the mall

from areas to the north or other origins unrelated to the Proposed Project. The Recirculated DEIR analysis does include data to help consider the Proposed Project's contribution of traffic to the streets of the Cory Neighborhood, as discussed in Master Response 1 and in response to comment 10-1. Traffic impacts on this neighborhood would be less than significant.

10-10

The commenter asks whether field observations validate the projected traffic numbers presented in the DEIR. The commenter asks why the more recent edition of the Institute of Transportation Engineers, Trip Generation (i.e., Seventh Edition) was not used and also asks for an explanation of how the projected daily trips break down to a.m. and p.m. peak hour trips.

The trip generation rates were based on the ITE, Trip Generation, Sixth Edition. While a more recent edition of this publication (i.e., Seventh Edition) has been published since the preparation of the analysis, the a.m. and p.m. trip generation rates are comparable for the land use categories proposed for the project. Thus, using the most recent edition of the ITE publication would not change the analysis. The ITE trip generation rates are developed based on extensive surveys of traffic patterns for specific land uses during peak hour conditions. The results of these surveys are then used to develop an equation and average generation rate for trips by land use category. The equation and average trip generation rate are then used to estimate projected vehicle trips for a Proposed Project. Therefore, the a.m. and p.m. trip generation rates were based on the established methodology of ITE, which is based on field observations of traffic patterns associated with specific land uses.

10-11

The commenter questions the validity of the trip assignment numbers and the assumption that no project trips would turn north on Bascom Avenue from Forest Avenue. The project's trip assignment was determined based on field observations of traffic patterns in the project area and based on published ITE information regarding trip assignment. The trip distribution patterns were reviewed by staff of the City of Santa Clara and City of San Jose to confirm that they best represent the traffic patterns that occur within the project area. It is anticipated that the majority of project-related trips would access I-880 via Stevens Creek Boulevard with most of the remaining trips using Hedding Street. Only a very small number of vehicles would use other neighborhood streets. The Neighborhood Transportation Impact Analysis (Appendix K of the Recirculated DEIR) confirmed that project-related potentially traveling on the surrounding neighborhood streets would not result in a significant traffic impact (see Impact 4.10-9 of the Recirculated DEIR).

10-12

The commenter states that the traffic count data used in the DEIR are outdated. To prepare the traffic analysis for the DEIR, which was published in March 2006, traffic count data were collected in the field and from data available from the City of Santa Clara and City of San Jose to evaluate the project's traffic impacts against a representative background traffic scenario for the existing roadway network. The collection of traffic count data were done in accordance with the policies of the cities of Santa Clara and San Jose for the use and age of the data. Prior to release of the DEIR, the traffic count data were updated to ensure that data used in the analysis were no more than 18 months old, which is consistent with the policy of the cities of Santa Clara and San Jose. In urbanized (i.e., fully developed) areas, traffic patterns do not dramatically change within a short period of time (e.g., 18 months), because the land uses that generate traffic remain substantially the same. Therefore, the traffic counts used in the analysis adequately represent the background traffic conditions in the project area.

The commenter suggests that surrounding land uses (e.g., Valley Fair shopping center, Santana Row) are increasing in popularity and that the increased trips are not accounted for in

the analysis. Regarding the validity of the traffic count data used in the analysis, please see the discussion above. In regards to the potential cumulative impacts associated with planned and approved growth and development of surrounding properties, the DEIR and Recirculated DEIR provided a comprehensive analysis of the project's cumulative traffic impacts. See Section 5.2, "Cumulative Impact Analysis," of the Recirculated DEIR. This analysis accounted for other planned and approved development project's that could contribute additional traffic trips on the study area roadways and included Santana Row and the recent proposed expansion of Valley Fair mall. As such the DEIR and Recirculated DEIR have adequately addressed the project and cumulative traffic impacts associated with implementation of the project.

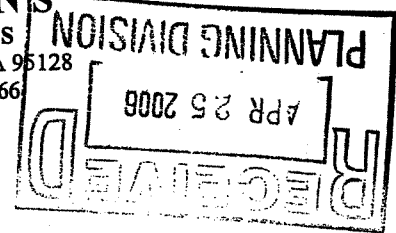
10-13

The commenter states that impacts to the Cory Neighborhood roadways were not evaluated in the DEIR. The neighborhood analysis presented in the DEIR and Recirculated DEIR evaluated the impacts of potential cut-through traffic impacts on roadways surrounding the Project Site, including impacts to City of Santa Clara and City of San Jose residents that live immediately adjacent to the Project Site. Please refer to response to comments 10-1 and 10-7).



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April 24, 2006

Gloria Sciara, Project Manager
City of Santa Clara, Planning Division
1500 Civic Center Drive
Santa Clara, CA 95050
gsciara@ci.santa-clara.ca.us

RE: BAREC/Santa Clara Gardens Draft EIR Comments

TO: Gloria Sciara

I am writing comments on the Draft BAREC EIR as an ecologist, as a trained landscape architect and former university professor in this field, as a past president of the oldest green industry organization in the United States (the American Nursery and Landscape Association), as a garden designer with a 27 year old Bay Area business which has won many national and state awards, as a care-giver for my senior parents who knows much about senior needs, as a resident who grew up just a mile from BAREC, and as a member of an organization called Save BAREC.

There are much untrue, inaccurate and important information not included in this EIR. Rather than go into detail on any issue I will touch on many of them. The information on Save BAREC's website, www.savebarec.com, is rich as to the BAREC history and biology and should be used to research what is missing in the EIR document.

SOIL

The historical research document for the chemicals used on the property is missing and, therefore, the list of chemicals that were tested must be inaccurate. What chemicals were dropped over BAREC from sharecropper planes from the 1950s to the 1970s? This information is missing. Why does the State have Dan Potash in charge of selling BAREC and also has his company DVP Associates writing the soil contamination report? Why doesn't the State have an independent company, one that specializes in environmental reporting do this report? Please explain how you choose your consultants and in particular how and why DVP Associates was selected.

11-1

11-2

SOIL REMEDIATION

You failed to consider a fourth option for clean-up—Biological Remediation. This option will clean the soil more thoroughly than removing the soil offsite. It is also safer and cheaper and more environmentally sound. Given the budget, it can be done in a few months. Soilfood Web is willing to work with the State to clean up the BAREC soils. They have experience with USDA, EPA, the Forest Service, many organic farms and nurseries, and have international clients. You should consider such a company for the BAREC soil remediation. I have attached a letter from Soilfood Web that states they can biologically clean up the Dieldrin and Arsenic in the soil as well as everything else listed. I have also attached two sites where

11-3

Dieldrin was cleaned up biologically to better than resident standards and better than is proposed by the State Department of Toxic Substances. One was signed off by the State Department of General Services (Morgan Hill) and the other was in an EPA report (Superfund site, Stauffer Chemical Corporation in Tampa Florida). Following are Internet sites about the Soilfood Web. One of these is on the U.S. Department of Agriculture's website.

http://www.soilfoodweb.com/03_about_us/approach_pgs/a_02_sfw_diagram.html

http://soils.usda.gov/sqi/concepts/soil_biology/soil_food_web.html

11-3
Cont'd

Since the chemicals the State has used have contaminated the soils in the gardens around BAREC, it seems like minimally the State could demonstrate to the neighborhood how to clean up their soils completely. Also, since seniors and children will use the site no matter what its use, they are particularly susceptible to any chemical no matter how little it is. I cannot understand the State can decide to take two sites that have higher rates than EPA allows and average them in the field so neither needs to be cleaned up. Please explain this. As an ecologist this kind of clean up does not make sense to me and is yet another indication why biological remediation should be considered.

11-4

HISTORY

The EIR historical documentation refutes the BAREC history written in "The Californian", the California History Center's magazine. Several copies of this magazine were given to Gloria Sciarfa at a Santa Clara BAREC Planning meeting and I would like to say I have submitted them into public record for the purposes of the EIR in this way. The historians who have different opinions about the historical records should meet and show each other their documentation to prove which one is correct. A mediator not attached to either side should clarify what is true. This would simplify the process and make it clear which piece of history is correct.

11-5

BAREC's historical importance:

1. At a meeting of the Santa Clara Historical and Landmarks Commission in 2003 the City's historian, Lori Garcia stated publicly: "BAREC is so important to the City and region that it should be placed on the National Historical Registry."
2. There are two historical buildings of importance on BAREC: a 1900s shop and a 1920s office building. There are also three greenhouses donated by the California Floriculture Society and built in the mid 20th Century.
3. These buildings are well built and badly needed in the community. They stand as a testament to the Valley's agriculture history. Why are such historical buildings not being saved?
4. Why are the housing plans eradicating all history from the site? The pictures of these plans look like they could be anywhere in the country and not on such an important historical place.

11-6

NATIONAL HISTORICAL REGISTRY STATUS FOR BAREC

The EIR states that BAREC is not illegible to be placed on the National Historical Registry. I do not believe this is true. The process to file the papers for national historical registry status has begun. There is currently only one California Extension Center that is on the National Historical Registry. It is the Shafter Research and Extension Center (SREC) and its primary purpose is to do cotton research. It is in Bakersfield and has far less history than BAREC. To find more about this extension center go to http://danrrec.ucdavis.edu/shafter/research_1.html.

11-7

SANTA CLARA AS CERTIFIED LOCAL GOVERNMENT

Santa Clara is a "Certified Local Government" and as such it is required to have research on its historical land and buildings. Since BAREC has contributed to the community since the 1860s and since it has been inside the boundaries of Santa Clara since 1983, it is as historically important as any of its old buildings. The City of Santa Clara as a "Certified Local Government" is required to make decisions about its historical land and buildings based on its records. However, it had no BAREC historical records when it voted to turn BAREC into housing in February 2003. Not even the City's Historical Commission knew about BAREC's history at this time. This seems like a problem when considering even if this EIR should be written. Several years ago Mary Hanel, the historian at Santa Clara's main library on Homestead, told

11-8

me they had very little information on BAREC's history. She said there was great public interest in BAREC. Consequently, my organization, Save BAREC, sponsored a BAREC historical talk at Santa Clara's Main Library and gave Ms. Hanel our BAREC historical documents.

11-8
Cont'd

BIOLOGICAL RESOURCES

There is an inaccurate survey done of the birds, mammals, and insects on BAREC. I have attached a list of arthropods found on BAREC by a San Jose State Science Professor in April 2006. Also following is an Internet site of the list of birds seen on BAREC a year ago by myself, an ornithologist, and a BAREC neighbor who raises birds (<http://www.savebarec.org/whysavebarec/birds-of-barec.html>). BAREC also could be habitat for Burring Owls that can be found approximately one and one-half miles away. They could very easily fly to the property. These lists should be incorporated in the EIR.

11-9

What has struck me and other biologists is that in one year the BAREC birdlife has been greatly reduced and the expected mammals that should be on the site (ground squirrels, raccoons, gophers, mice) are not found not even a dropping or footprint. Even the Hawk's nest is gone. There are holes in the ground that could be from ground squirrels and there are nests of Swallows in the buildings. There certainly is enough food for them with the populations of diverse arthropods. Standing water has no insects in it as it should. The site is too clean, too lacking in life. This is not normal. If this is so, then could the problem be as serious for humans who may live on this land? There should be an independent study on this problem before people begin working and living here.

11-10

ALTERNATIVE TO HOUSING

The Draft EIR open space alternative is not accurate and is not true. Save BAREC's open space ideas have been documented at Santa Clara City Council meetings, in newspapers (San Jose Mercury, Rose Garden Resident, The Metro, Santa Clara Weekly), on television (Comcast's Environmental Concerns) and television (Channel 6 pm News), and to the Santa Clara Unified School District and San Jose City Council and San Jose's Park's Commission and County Planning Commissioners. Most of this documentation is on our website, www.savebarec.org including plans for the property. Why did the EIR Alternative Plan fail to contact the people most interested in an open space alternative, the Save BAREC group? Basically Save BAREC would like to keep BAREC 100 percent agriculturally zoned for environmental education and teaching citizens and especially children about healthy food and nature. The University of California at Santa Cruz Agroecology and Sustainable Food Systems and Life Labs programs have offered to help Santa Clara create a similar center as theirs but only will come to Santa Clara Valley on BAREC land. There is a non-profit foundation, VIVA (Valley Initiative for Values in Urban Agriculture), which could be the non-profit that runs it for the public good. We have many individuals, foundations, and governments which could set forward to help pay for purchasing the property and the UC Santa Cruz Agroecology and Sustainable Food Systems has offered to help show us how to make it financially self-sustainable as they have done.

11-11

SENIOR HOUSING

It is questionable if senior housing should be on this property. I have attached several attachments why this would be a problem and what questions still need to be asked about more low income senior housing in the community.

11-12

Sincerely yours,

Kathryn Mathewson
408-292-9595
kmathewson@secretgardens.com

8 Attachments: BAREC Arthropod list, 2 Bioremediation studies that remove Dieldrin, Letter from Soilfood Web, Aerial Map of Santa Clara Senior Housing in 5-mile radius of BAREC, Senior Housing Comments/Questions, Resolution (Suggested)

LETTER 11

Secret Gardens
Kathryn Mathewson
April 24, 2006

- 11-1** The commenter questions the criteria used in the selection of the range of chemicals tested for on-site hazardous materials investigations. Please refer to Master Response 3, Section 3.4.1, “Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents” and response to comment 8-4.
- 11-2** The commenter questions whether the method of selection for contractors and consultants on the project is biased towards contractors preferred by members of the City Council. This comment does not address environmental issues or the contents of the DEIR, so no additional response is necessary.
- 11-3** The commenter states that the DEIR does not describe a range of reasonable alternatives for the site cleanup and suggests that bio-remediation should be further examined. Please refer to Master Response 3, Section 3.4 “Use of Phytoremediation/Bioremediation to Remediate On-Site Soils.”
- 11-4** The commenter expresses the opinion that the analysis of on-site chemicals of potential concern and proposed remediation are inadequate and further inquires why the State would allow two locations with dieldrin above State standards to remain. Please refer to Master Response 4, Section 3.4.1, “Methodology Used in Preparation of the Hazardous Materials Analysis and Determination of Constituents” and response to comment 8-4.
- Regarding the two on-site locations where dieldrin concentrations are above State standards, the dieldrin concentrations at these two locations are 42 and 37 micrograms per kilogram (ug/kg), respectively. The preliminary remediation goal (PRG) is 30 ug/kg, which corresponds to a cancer risk of one in one million (1×10^{-6}). The dieldrin concentrations at these two locations are not significantly above the PRG. The maximum cancer risk from these two locations corresponds to a cancer risk of 1.3 in one million (1.3×10^{-6}), which is within the DTSC acceptable risk range and, as such, no remediation is required at these two locations.
- 11-5** The commenter states that historical documentation of the site written in "The Californian" magazine was refuted by the DEIR. The commenter requests that the matter be resolved by setting up a meeting between the two historians that disagree about the site's historical significance together with a mediator for settling the disagreement. CEQA requires that a lead agency base its determination of the significance of environmental effects addressed in an EIR on substantial evidence (see State CEQA Guidelines Section 15064[f]). It is recognized that other evidence or expert opinion may suggest a different conclusion. When competing evidence exists or experts disagree about environmental conclusions, the EIR should acknowledge that other evidence or disagreement. The lead agency has discretion to rely upon the views of a particular expert, provided that expert's opinion is based on facts. Disagreement does not mean the EIR's analysis is inadequate. The City of Santa Clara, as Lead Agency, will ultimately determine which conclusion is appropriate, based on the

substantial evidence presented in the EIR and other information in the administrative record. Regarding disagreement with the conclusions presented in the DEIR, please refer to Master Response 2. Regarding historic significance issues, please also refer to Master Response 5, Section 3.5.2, “CRHR and NRHP Eligibility Determination.”

- 11-6** The commenter states what cultural resources she believes are on the Project Site. This includes a statement submitted by Lori Garcia to the Santa Clara Historical and Landmarks Commission that BAREC should be placed on the National Register of Historical Places and the opinion that several historical buildings are on the site. The DEIR contains an evaluation of the site’s cultural resources consistent with the requirements of CEQA in Section 4.11, “Cultural Resources.” As described therein and further elaborated in Master Response 5. The conclusion of the EIR, after extensive research and review of evidence in the record, is that neither the structures on the Project Site nor the landscape qualifies as historical resources under Section 15064.5 of the State CEQA Guidelines or are eligible for listing on the California Register of Historical Resources (CRHR) or the National Register of Historic Places (NRHP). Further, staff of the OHP concurred with findings presented in the DEIR (see Appendix B of this document). Regarding disagreements with the conclusions presented in the DEIR, please refer to Master Response 2.
- 11-7** The comment states that the Project Site should be placed on the National Register of Historical Places. The DEIR contains an evaluation of the site’s cultural resources consistent with the requirements of CEQA in Section 4.11, “Cultural Resources.” As described therein and further elaborated in Master Response 5, the conclusion of the EIR, after extensive research and review of evidence in the record, is that neither the structures on the Project Site nor the landscape qualify as historical resources under Section 15064.5 of the State CEQA Guidelines or are eligible for listing on the CRHR or the NRHP. Further, staff of the OHP concurred with findings presented in the DEIR (see Appendix B of this document). Regarding disagreements with the conclusions presented in the DEIR, please refer to Master Response 2.
- 11-8** The comment states that City of Santa Clara as a Certified Local Government is required to do research on its historical land and buildings, but that it had no historical records when it voted to develop the site. Additional points are provided regarding the cultural and historical significance of the Project Site. Contrary to the comment, the City has not yet approved a development proposal for the site. The purpose of the EIR is to provide information regarding the potential environmental impacts the City needs to make its decisions about development of the site. The project’s impacts to historical resources are evaluated in conformance with Section 15064.5 of the State CEQA Guidelines and the City’s local historical criteria and the results of this analysis are presented in Section 4.11, “Cultural Resources,” of the DEIR. The conclusion of the DEIR, based on its substantial evidence, is that neither the Project Site buildings nor the landscape are eligible for listing as a local resource, California Historical Landmark, or Point of Historical Interest, because they do not meet CRHR eligibility criteria. The eligibility criteria are described in Section 4.11, “Cultural Resources” of the DEIR. As a result, the project would not disturb or destroy any known significant cultural resources.
- 11-9** The commenter states that the biological surveys conducted on the site were inadequate. She suggests the possibility of burrowing owls flying to the site and provides references to a list of arthropods and an internet link with a list of birds observed on-site by her and a neighbor. Biological effects of the Proposed Project are evaluated in Section 4.5, “Biological Resources.” Impact 4.5-2 addressed the potential for burrowing owls to be present and determined that potential effects would be less than significant. The Project Site contains no

native plant communities, so its wildlife habitat value is low. This circumstance exists because the site has been repeatedly disturbed over the years due to its use for agricultural purposes.

- 11-10** The commenter notes that the wildlife observed on BAREC has declined over the course of one year, and speculates as to whether a problem for humans may, therefore, exist. There is no evidence offered to support the opinion that a substantial one-year decline has occurred. If such a decline has occurred, year-to-year variations in the wildlife occupying an undeveloped site surrounded by urban uses could be caused by a wide variety of reasons. Many sources of direct or indirect disturbance to on-site wildlife are present by virtue of the urban-density development and population on all sides of the site (e.g., human commotion, free-roaming pets, invasive non-native plants and animals encroaching into the site). The site is owned by the State of California and maintained for safety purposes (e.g., fire hazards) by DGS. Since closure of BAREC operations, the site has not been maintained for horticultural purposes. The DEIR contains evaluations of potential issues that could involve hazards to humans in Sections 4.6, “Hazards and Hazardous Materials,” of the DEIR. The DEIR thus contains an independent evaluation of potential human hazard issues, as requested by the commenter.
- 11-11** The commenter advocates an open space, agricultural option to the development of the site. The DEIR analyzes an alternative that would maintain the site in its current open-space condition (identified and analyzed in Section 7.2, “No Project Alternative—Continuation of Existing Conditions,” of the DEIR). The DEIR also considered an “open space” alternative (see Section 7.7.2). Also, the question is asked why the preparers of the EIR did not contact Save BAREC, a group who supported an open space option. The EIR’s public involvement process followed the statutory and State CEQA Guidelines requirements for public notice and public review in seeking public input and incorporating it into the EIR. These requirements are intended to provide the opportunity for public groups, like Save BAREC, to provide their recommendations, comments, and positions for consideration by the lead agency.
- 11-12** The commenter states that it is questionable whether senior housing should be on the Project Site, without raising an issue about an environmental topic. This comment requires no response, because it does not raise an environmental issue or comments about the EIR’s contents.

April 20, 2006

TO: Virginia Lasky
Department of Toxic Substances Control
700 Heinz Avenue
Berkeley, CA 94710
510-540-3829/ vlasky@dtsc.ca.gov

TO: Gloria Sciara, Project Manager
City of Santa Clara, Planning Division
1500 Civic Center Drive
Santa Clara, CA 95050/ gsciara@ci.santa-clara.ca.us

RE: BAREC/Santa Clara Gardens RAW and EIR Comments

I am the Director of the Soil Food Web in Oregon. We are internationally known as a company that remediates chemically treated soil by adding microorganisms to the soil. We specialize in cleaning up agricultural sites many of which are worse than what is found in the BAREC soils. We have done a great deal of this work on the agricultural lands of Sonoma, Napa, and Monterey counties especially for organic vineyards and strawberry growers. Removing Dieldrin and Arsenic are not problems for us.

No matter what the future of the BAREC land becomes it is clear that your process of removing the soil offsite will not clean up the site as completely and effectively as our process. It is vital if children and seniors use the BAREC 17 acres in the future that the land be remediated thoroughly and not partially, as is what we are seeing in your RAW Report. The costs for using this natural process are far less than for removing the soil off site as the RAW is suggesting. We also have several local Peninsula people who have been trained in our laboratories with our methods. They are located within 30 minutes of BAREC.

For several years our founder, Dr. Elaine Ingham, has been talking to the landscape and agricultural communities in and near Santa Clara about the BAREC situation. She has expressed an interest in helping clean it up properly for future generations. There is a great need for a biological soil-testing laboratory in California and this clean-up process could be the beginning of a new industry and new jobs for the City of Santa Clara.

We hope you will consider this wonderful alternative to remediate the BAREC soil.

Sincerely yours,

Joe Whaley
Soil Food Web
728 South Wake Robin Avenue
Corvallis, OR 97333
541-752-5142 (f)
whaleyj1@hotmail.com

12-1

LETTER 12

Joe Whaley
April 20, 2006

12-1 The comment states that the proposed process of removing contaminated soil is not as good as the process of adding microorganisms to the soil. The remediation alternative selected is based on a comprehensive review of site specific data (e.g., Phase I and Phase II Site Characterization Reports) that documents the type, location, and concentrations of proposed contaminants present on the Project Site. This information is then used to prepare a Draft Removal Action Workplan (RAW) that recommends various remediation alternatives, one of which is selected as the preferred alternative. With regard to the feasibility of bioremediation and phytoremediation processes, please refer to Master Response 4, Section 3.4, “Use of Phytoremediation/Bioremediation to Remediate On-Site Soils.” The commenter offers no evidence on how the proposed remediation would be environmentally better; therefore, no further response can be provided.

From: "Gloria Sciara" <gsciara@ci.santa-clara.ca.us>
To: "Carol McCarthy" <CMcCarthy@ci.santa-clara.ca.us>
Date: 4/11/2006 10:41:38 AM
Subject: Comments from Craig Mineweaser

Carol

Thought I would also give you a copy of the HLC's Architectural Advisor's comments on BAREC. This memo was passed out to the HLC at their meeting last week and discussed. We will add this to our public record.

CC: "Kevin Riley" <KRiley@ci.santa-clara.ca.us>, <OlekszulinA@edaw.com>

**Request for Cultural Resources Comments for Santa Clara Gardens Development
(BAREC)
90 North Winchester**

I've read the section of the EIR that discusses the site and buildings as a historic and cultural resource, and the Historic Evaluation/Architectural Survey Report. I find it is undeniable that this site has a rich social history, first as Osborne Hall, and then as the Women's Relief Corp home. It is equally undeniable that the site also has a rich local history as one of the agricultural field stations established by the University of California at several locations around the state. However, the Report also presents how the landscape of the site, the historical buildings on the site, and their relationship to this landscape have been demolished, altered and/or changed repeatedly to the point that in all three cases their historical integrity is gone. The other buildings on site are newer than 50 years, but are not historically significant either architecturally, or in their setting and their associations with the site and its activities.

Therefore I am forced to agree with the Staff suggested Condition of Approval as far as the history of the buildings and site is concerned – namely that *“because of the association of the BAREC lab/office and shop with local agricultural history...historic documentation of these buildings be prepared, including photographs taken according to the archival standards of HABS. Copies...”*

There is a “Sketch Map” (page 23 of the DPR forms) within the Historic Evaluation Report, but it is not to scale and it does not show the relationship of the buildings to their surrounding site. There are also photographs (pages 6 – 23) of the buildings in this Report, but they are insufficient to tell the scale, size and details of the buildings are required by HABS standards.

I suggest that the Commission might also consider expanding the suggested Condition of Approval recommendation to require that the following documentation be prepared:

1. A scale site plan drawing documenting the locations of all the buildings currently on the site and the uses of all other portions of the site.
2. Similarly a “measured drawing” (floor plan only) of each individual building should also be produced,
3. These documents should all be prepared according to HABS standards.

Having this information accompany the HABS photographs would be a great help to future researchers to better understand how the property was used.

Craig Mineweaser, A.I.A.
of Mineweaser & Associates, Preservation Architecture
Volunteer Architectural Advisor to the Historical & Landmarks Commission

File: \HLC_BAREC_90_Winchester_06-04.doc

13-1

HISTORIC EVALUATION REPORT
BAY AREA RESEARCH & EXTENSION CENTER
Office of Veterans Affairs
68 & 90 NORTH WINCHESTER BOULEVARD
CITY OF SANTA CLARA, SANTA CLARA COUNTY, CALIFORNIA

FOR

DAVID J. POWERS & ASSOCIATES
1885 The Alameda, Suite 204
San Jose, CA 95126

ATTN: Ms. Shannon George

BY

WARD HILL
CONSULTING ARCHITECTURAL HISTORIAN
3124 Octavia Street
San Francisco, CA 94123

October, 2002

TABLE OF CONTENTS

I.	Introduction.....	4
II.	Historical Background.....	5
III.	Description of Historical Resources.....	11
IV.	Historic Evaluation.....	13
V.	V. Impacts & Mitigation.....	15
VI.	VI. Bibliography	17

Attachments

DPR 523 Forms

Primary Record & Building, Structure & Object Record
90 North Winchester Boulevard
68 North Winchester Boulevard

I. INTRODUCTION

The project proposes residential rezoning of an 18 acre parcel owned by the State of California. The current uses of the property are the 17.5 acre Bay Area Research and Extension Center (BAREC) property, an agricultural research station of the University of California, at 90 North Winchester Boulevard, and a Department of Veterans Affairs office building at Winchester Boulevard. The historic name of the BAREC property is the University of California Deciduous Fruit Field Station.

Mr. Ward Hill¹, consulting Architectural Historian, conducted a detailed survey of the buildings on the project site October 7, 2002. The survey identified nine buildings on the project site. The buildings on the project site include a lab/office building, shop, greenhouses and related structures on the BAREC property. The Office of Veterans Affairs building is a modern building dating from 1959. During the survey, Mr. Hill physically examined and photographed the exterior and interior of the BAREC buildings in order to prepare written descriptions, noting exterior and interior alterations.

Mr. Hill conducted archival research conducted during October, 2002. The research concentrated on the history of the BAREC operation and the University of California Agricultural Extension. Research was also conducted on the history of the City of Santa Clara for the historic context statement. Archival research was conducted in local repositories of historical records, including the the Biosciences Library and the Bancroft Library, University of California, Berkeley; Local History files and the Santa Clara County Historical and Genealogical Society collection, Santa Clara City Library; the California Room at the Martin Luther King, Jr. Public Library, San Jose, the archives of San Jose Historical Museum, San Jose, in addition to local historical materials available in Mr. Hill's personal collection of historical materials. Fred Perry and Luzanne Martin with the University of California Research and Extension Centers Administration Office, Davis, California provided valuable background on the history of BAREC property from their files. Mr. Hill also interviewed Edwin Amstutz, brother of Alfred Amstutz, ex-superintendent of the BAREC operation and Ann Schuering, a noted expert and writer on the history of California agriculture.

The buildings on the project site have not been previously evaluated under any local, state or federal historic designation criteria. The following historic evaluation was conducted as per the requirements of the California Environmental Quality Act (CEQA). For purposes of CEQA compliance, an historic resource is a resource listed in, or determined eligible for listing in, the California Register of Historical Resources. None of the buildings on the project site appear to be eligible for the California Register of Historical Resources. Consequently, the proposed project will not have a significant effect on historic resources.

¹Mr. Hill (M.A. Architectural History, University of Virginia, 1983) has worked as an architectural historian and in the historic preservation field for 18 years. He has completed numerous reports evaluating historic buildings under both CEQA and Section 106 of the National Historic Preservation Act.

II. HISTORICAL BACKGROUND

General Background

The Spanish and Mexican Period

Father Junipero Serra founded the original Mission Santa Clara de Asis on the banks of the Gaudelupe River in January, 1777. The present location is near the Central Expressway and De La Cruz Boulevard in Santa Clara. The *Pueblo de San Jose de Guadalupe* was established in November 1777 as the first civic settlement in Alta California. The mission was the eighth of the 21 missions founded during the Spanish Period. A flood in 1779 destroyed the first mission. The padre moved the mission to what is today the University of Santa Clara campus. An earthquake in 1818 destroyed the second mission. The third mission church was built in 1822 on its current site on the University of Santa Clara campus. This mission was partially rebuilt after the earthquake in 1868. Destroyed by fire in 1926, the third mission was replaced with the reconstruction extant today.

The Mexican revolt against Spain (1822) followed by the secularization of the missions (1834) changed land ownership patterns in the Santa Clara Valley. Mission Santa Clara was secularized in 1836. Only 300 Indians lived at the mission by 1839. The Spanish philosophy of government was directed at the founding of presidios, missions, and secular towns with the land held by the Crown, whereas the later Mexican policy stressed individual ownership of the land (Findlay 1980:6). During the Mexican Period, vast tracts of land were granted to individuals, including former Mission lands which had reverted to public domain. In the Santa Clara Valley, 17 parcels were granted from Pueblo Lands, and 13 from the lands of Mission Santa Clara. In 1844, James Forbes received a grant for *El Potrero de Santa Clara*, the mission land bounded by the Guadalupe River and The Alameda. The general trend for granting these lands was to give away the land farthest from the Pueblo and Mission first. Each grant also usually contained both valley and uplands acreage as well as access to a water supply (Brook 1932:44-45).

The waterfront of the *Embarcadero de Santa Clara* (later Alviso), originally developed to allow the early Spanish settlements water access, functioned as one of the foremost points of access for the trade that coursed up and down the Guadalupe River. Native Americans were employed in the trade and often manned large boats to reach ships at anchor to exchange hides and tallow, lumber, quicksilver and agricultural products for imported trade goods. Hides and tallow, and later ore from the New Almaden Mines were loaded on rafts or other flat boats and shipped down the Guadalupe.

American Period

In 1848, California became a United States territory as a result of the Treaty of Guadalupe Hidalgo ending the war with Mexico. California was not formally admitted as a state until 1850. After California was admitted as a state, Santa Clara County was one of the original 27 counties.

created by the California legislature. 1848 was also the year of the Gold Rush that brought a massive influx of immigrants to California from all parts of the world. California's 1848 population of less than 14,000 (exclusive of Indians) increased to 224,000 in four years. With the beginning of the American period, the population explosion resulting from the Gold Rush created a market for a wide range of agricultural products. As more and more gold seekers became discouraged with mining, they turned to farming as a livelihood. Farmers started to raise crops and livestock for sale, not just to be self-sufficient.

The population of the Santa Clara Valley expanded as a result of the Gold Rush (1848), followed later by the construction of the railroad to San Francisco (1864) and the completion of the transcontinental railroad in 1869. Throughout the late nineteenth century in the Santa Clara Valley, rancho, Pueblo, and mission lands were subdivided as the result of population growth, the Anglo-American takeover, and the confirmation of property titles. Prior to the legal resolution of titles, the transfer of real estate was extremely risky. Large cattle ranches were converted to farming varied crops, and this agricultural land-use pattern continued throughout the American Period.

Upon the transfer of California government from Mexico to the United States in 1848, American settlers in Santa Clara promoted a survey of the town on the land adjoining the mission in the typical American grid pattern. Pioneer William Campbell parceled the land into lots of 100 square yards in 1850. The grant of a lot came on the condition that a house would be built in the next three months. The area included the original grid about 2 miles long and 1.5 miles wide. The town of Santa Clara was incorporated in July, 1852. The California legislature increased Santa Clara's town limits by 1,950 acres in 1856.

Santa Clara was the site of two significant early educational institutions in the California. The Catholic Archbishop in San Francisco instructed the Jesuit priest Father Nobili to renovate the deteriorated mission buildings into a college. Santa Clara College had 12 students when it opened in 1851. The University of the Pacific opened in Santa Clara in 1852 (it moved to San Jose in 1871, then later to Stockton).

The first major business in Santa Clara was the commercial hide tanner Wampach Tannery, established in 1848. The business became Eberhard Tannery in 1866 after its purchase by Jacob Eberhard. The company made fine leather goods in Santa Clara until it closed in 1953. Santa Clara also had a number of large seed farms such as J.M. Kimberlin & Company and R.W. Wilson Seed Company, later Ferry Morse, one of the world's largest seed producers. Founded in 1874, the Enterprise Mill & Lumber Company became the Pacific Manufacturing Company in 1880 after its acquisition by James Pierce. Pacific Manufacturing was the region's largest lumber manufacturer. Other Santa Clara businesses in the 1870s included the Cameron Hotel, the Bank of Santa Clara and the town first newspaper, *The Santa Clara Echo* (Thompson & West 1876:15).

In the early American Period, the main agricultural product in California was wheat and the type grown in the Santa Clara Valley was considered to be higher quality than other areas of California. Santa Clara County's wheat production increased from 600,000 bushels to a peak of almost 3 million bushels in 1878. Wheat farming declined in California by the 1880s because yields dropped from not rotating crops and the development of competing wheat growing areas like Australia and Argentina (Hilbert and Lewis 1984:2). The development of irrigation and new transportation systems in California also led to wheat being replaced by more lucrative crops, like fruit and vegetables. The opening of the transcontinental railroad also made it easier to ship fresh and canned products to the major cities in the east coast.

The drop in wheat production coincided in Santa Clara County with a shift to fruit growing as the basis of the local agricultural economy. Horticulture had early roots in San Jose with the work of Louis Pellier, Antoine Delmas and William Daniels in developing orchards and fruit varieties for the growing conditions. The 1853 Pioneer Horticultural Society founded in San Jose provided a forum for nursery men to meet and to promote of local horticulture. The First State Agricultural Fair was held in 1856 in San Jose with the Santa Clara County orchardists winning most of the awards. In the 1870s, prunes became the predominant crop in the Santa Clara Valley, with other fruits, like apricots and cherries, and grape vineyards, also contributing to the economy. Dried fruit production exceeded fresh fruit because of its ease of shipping and low spoilage. Both Santa Clara and Campbell vied for the title of the Prune Capitol of the World. The fruit canning industry began in 1871 when

LETTER 13

Craig Mineweaser
(no date)

- 13-1** The commenter states that based on review of the information regarding historic resources presented in the DEIR, he agrees with the conditions of approval recommended by the City and suggests that the City consider expanding the conditions of approval to include a scaled site plan and measured drawings prepared to Historic American Buildings Survey (HABS) standards. The City intends to comply with the commenter's request and will add recordation of site structures in accordance with HABS standards as a condition of project approval.

Response for Draft EIR by Andy Gremett

Section 2.3.2

“provide senior affordable housing”

There are currently two multistory senior housing facilities located on Winchester between Pruneridge and Dolores. There are also at least two other facilities located off of Forest between O'Connor Dr. and Bascom. I did not see the fact that this appears to be a high density of senior housing in a relatively small area addressed within the report. I believe that since these facilities straddle two city limits the EIR may not have taken into account areas of San Jose that border the 17 acre site. A person's neighborhood doesn't stop at an arbitrary city border. A neighborhood is typically the area directly surrounding where a person lives. The neighborhood should be balanced in terms of all races and ages. It is unfair to expect one particular part of Santa Clara to be more focused on elderly housing while other areas; say around Santa Clara University, are not being ask to diversify their neighborhoods.

14-1

Emergency Services

I also did not see any significant information regarding emergency services and their ability to service the new houses and the senior facility. Based on the emergency services that the current senior facilities on Winchester require will adding new homes and the four story senior facilities affect response times or require hiring of additional personnel? I don't believe there is enough information within the report to come to any conclusions. There should be some information from city emergency services for both cities as both may be required to respond to emergencies.

14-2

Based on the age of residents within the senior housing facility there may be additional noise due to emergency vehicles. I did not see this addressed within the noise pollution section.

14-3

2.3.4

“Pedestrian access to the 1 acre park”

If this development is approved I am seeking zero impact on the surrounding neighborhood. Access to a park located within the 17 acre property would increase vehicle and foot traffic on Forest and the surrounding streets. People would walk down our streets to the park and they would park their cars on existing streets instead of entering the facility on Winchester. I am completely opposed to any access to anything within the 17 acre area from existing city streets.

14-4

Note: There is a park at the end of Forest. Any day, mostly in the evenings there are people waiting by the pay phone. Based on past experience these folks are not engaging in legal activities and are using this phone and the surrounding park for illegal activities. There was no evaluation of how behavior this impacts the existing neighborhood.

2.3.5

“Conversion of Farmland”

While there is mention that there is currently no feasible mitigation to converting this land there is no information on what other sites were considered. I don't believe that there is enough information here for me to conclude that they looked for an additional site

14-5

Vehicular Site Access and onsite Circulation Impacts

The intersection of Winchester and Forest will be changed. Mitigations for this intersection are out of the control of the City of Santa Clara. However, this intersection greatly affects current residents. I see no information from the city of San Jose as to how they will deal with issue and the EIR states this is a significant impact. I have yet to see the two cities work together on the proposed development project. I have placed multiple calls to the City of San Jose, Ken Yeager, to ask him to attend the EIR scoping meetings and Santa Clara city council meetings and have not see a representative to date. Based on this I do not believe the cities can or want to work together to resolve this for San Jose and Santa Clara residents. **This is a critical point.** In addition, business impacts of the proposed traffic intersection changes were not mentioned. Have they been consulted? I did not see information on the impact for the residents on Pruneridge.

14-6

Transportation

The deterioration of service of the intersections of Pruneridge/San Thomas Expressway and Hedding /Bascom is not solved. Again, the solution is to tell the city of San Jose that they will have a problem. The intersection of Pruneridge and San Thomas Expressway is a very busy intersection during most of the day. There is no mention that the city of San Jose will be making improvements.

14-7

Table 2-1, 4.1.3

I disagree that the park would have beneficial impact to the neighborhood. The additional foot traffic and vehicle parking would negatively impact the neighborhood. This section presupposes that residents want the park. No proper evaluation of this impact was addressed. See above for additional concerns regarding park loitering.

14-8

4.10-3

The mitigation measures suggest large amounts of additional traffic on Dorcich. I don't believe that the impact of this additional traffic was addressed within this report.

4.10-9

I do not believe the impact to the surround neighborhood streets was addressed. Currently there is an excess of traffic with dealership test drives and people cutting thru the neighborhood from Stevens Creek to avoid the light at Winchester. If the Forest/Winchester signal will be changed both during the construction and after the completion traffic patters will change. I believe that residents leaving the propsed 17 acre facility will make a right turn onto Winchester then a right turn on Dorcich and either proceed to Stevens Creek via a small residential street or proceed to Pruneridge via a small city street. It is not reasonable to expect that the new residents will make u-turns at Stevens Creek to proceed north on Winchester.

14-9

3.6.3

The four story structures will be taller than any dwelling currently in the surrounding neighborhood. Views of the hills will be eliminated for existing residences. This fact was not brought out in the report. In fact, points were made to the contrary throughout the document.

14-10

3.6.4

I do not believe the parking for the single family dwellings will be enough and residents will park their vehicles on existing residential streets. In driving thru new housing developments in both Santa Clara and San Jose I have noticed an excess number of vehicles parked on surrounding streets. This is often due to the close proximity of the houses. Lots that are not much bigger than the square footage of the houses typically provide very little driveway space and force residents to park their cars on surrounding streets. This will no doubt affect the existing residents and current city streets with addition street parking.

14-11

LETTER 14

Andy Gremmet
(no date)

- 14-1** In reference to Section 2.3.2, the commenter questions the necessity for more senior housing around the project area, because there are already many such units. This is not a CEQA issue and does not address the analysis provided in the DEIR; therefore, no response can be provided.
- 14-2** The commenter questions the capacity of local services for handling increased demand in emergency services if the site has housing developed on it. Impact 4.9-1 in the DEIR states that the project would not substantially affect the ability of local police and fire departments to respond to emergencies in the project area because of its close proximity to existing police and fire stations and limited increase in traffic volumes.
- 14-3** The commenter says that noise levels may increase as a result of increased emergency vehicle activity. Siren noise from emergency vehicles responding to the Project Site residences could occur, but by its nature the timing and frequency of such an event would be unpredictable. Other than to recognize that emergency vehicle response could occur, as it could with any residential use, further evaluation to attempt to characterize the extent of impact would be too speculative to be meaningful. In accordance with Section 15145 of the State CEQA Guidelines, overly speculative impacts should be noted, but detailed evaluation is not required.
- 14-4** Referring to Section 2.3.4, the commenter states that the proposed park may encourage additional vehicle trips from outside visitors. As described on page 4-105 of the DEIR, data collected from a nearby city park was used to estimate trips generated by the proposed park. The approach of using traffic data from an analogous nearby park to help predict traffic generated by the proposed park provides substantial evidence to support the traffic analysis. The expected trips to the proposed park were combined with other project-related trips to evaluate the traffic impacts of the Proposed Project.
- 14-5** In reference to Section 2.3.5, the commenter questions the conclusion that there is no feasible mitigation for converting agricultural land on the Project Site. Please refer to response to comment 76-4 for an explanation of this issue.
- 14-6** The commenter states that no analysis was conducted for potential traffic impacts on residents in San Jose, adjacent to the property. Please refer to Master Response 3, Section 3.3.3, "Traffic Impacts in San Jose."
- The commenter also questions whether the City of Santa Clara and City of San Jose would work together on resolving traffic impacts in the two cities. No further response is necessary, because the comment does not raise environmental impact issues.
- 14-7** The commenter states that no analysis was conducted for potential traffic impacts on residents in San Jose and nearby intersections in San Jose. Please refer to Master Response 3, Section 3.3.3, "Traffic Impacts in San Jose."

- 14-8** Regarding Section 4.1.3, Table 2-1, the commenter states that the proposed park may encourage additional vehicle trips from outside visitors. Please refer to response to comment 14-4.
- 14-9** Referring to Sections 4.10.3 – 4.10.9, the commenter states that the impacts to surrounding smaller streets as a result of traffic increase were not properly analyzed, including Dorcich Street. Please refer to Master Response 1. Impact 4.10-9 of the Recirculated DEIR contains an extensive analysis of potential impacts to neighborhood streets around the Project Site, including Dorcich Street. The analysis supports the conclusion that significant neighborhood traffic impacts would not occur as a result of the Proposed Project.
- 14-10** In reference to Section 3.6.3, the commenter states that buildings as large as four stories (i.e., the senior housing buildings) on the Project Site would eliminate views of the hills for local residents. Vistas to the surrounding hills would be closest and most prominent to the west, southwest, and south with views of the eastern hills of the Coast Range. Homes adjacent to the north side of the Project Site closest to Winchester Boulevard would be the only ones with a line of sight toward these hill vistas that would cross the site of the proposed senior housing buildings. Up to about 10 existing homes along Forest Avenue could be in this position; however, the senior housing buildings are arranged along Winchester Boulevard and the southern side of the Project Site, so they are set back from these homes between 150 to 600 feet to the south. Based on the distance of this set back and the view angle to the hill vistas, the proposed senior housing buildings would not eliminate the vistas. The buildings would partially screen views of the lower portion of some of the hills, but most of the broad vista of the Coast Range would still be available. Considering these site conditions, the potential effect on interruption of hill vistas would be less than significant. For further discussion of this issue, please see DEIR Impact 4.2-1.
- 14-11** In reference to Section 3.6.4, the commenter states that the impacts on local parking from the development of the site have not been properly addressed in the DEIR. The DEIR and Recirculated DEIR address parking impacts in Section 4.10, Impact 4.10-6, where the potential for a significant parking effect related to the senior housing development is recognized and mitigation is recommended. Please refer to pages 4-33 and 4-42 of the Recirculated DEIR.

I Do not want the Santa Clara Gardens project to be approved. I do not want the City of Santa Clara to change the zoning because the last of Santa Clara's Prime Farmland must be preseved!!! Will future generations ever know what agriculture is if they can't see it? This area already has far too many buildings, and cars and people that the infrastructure cannot efficiently support. More building at the sacrifice of such an important part of the community is unthinkable. "Let them eat cake" is getting really old. Debra Cancilla

Join the new Messenger beta now

15-1

LETTER 15

Debra Cancilla
(no date)

15-1

The comment expresses opposition to the project and to changing the Project Site zoning, and states that existing infrastructure cannot efficiently support area buildings, cars, and people. The project's impacts to local infrastructure (i.e., water, wastewater, stormwater, roadways, parks) were evaluated consistent with the requirements of CEQA in Section 4.9, "Public Services and Utilities," of the DEIR. As described therein, the project with mitigation would result in less-than-significant public services impacts. Because no specific issues pertaining to the analysis are identified, no further response can be provided.

APR 24 2006

City of Santa Clara
Planning Division

HELLO GLORIA,

IT REALLY SADDENS ME NOW
THIS BARE PROPERTY HAS BEEN RABED. I
KNOW IT WOULD HAVE NEVER BEEN WILLED
FOR AGRICULTURAL USE ONLY IF THIS FUTURE
WAS KNOWN. WELL THAT HONOR HAS BEEN
BROKEN BY THE GREEDY! YOU KNOW WHAT
PEOPLE DO TO OTHERS FOR MONEY. WOULD I
THINK LIKE THIS IF I WERE A CITY OR
STATE OFFICIAL. WOULD I NOT CARE WHAT
WAS BEST FOR THE PEOPLE OF SANTA CLARA, THE
NEIGHBORS OF THE BAREC OF THE LAND OF THE BAREC.
I HAVE LIVED HERE IN THE SANTA CLARA VALLEY
ALL MY 57 YEARS OF LIFE. I BOUGHT MY
FIRST CAR PICKING THE PRUNE'S THIS VALLEY
PRODUCED FROM THE CAPAVALLI RANCH IN SUMMIT
I KNOW WE HAVE ENOUGH HOMES, BUILDINGS,
CONCRETE & PAVEMENT TO OUTLAST EVEN
MY CHILDREN'S CHILDREN. GEE! LETS DO
SOMETHING SPECIAL, LETS COVER UP THIS LAST
PIECE OF MEMORY WE HAVE OF WHAT WE ONCE
HAD. IF WE CONTINUE THIS WAY OF PLANNING
& THINKING THEN WE WILL NEVER FIND A
CURE FOR CANCER. WE ARE CANCER.

SORRY

Ken Rundberg

P.S. GIVE
THIS LETTER
AND COFFEE

I USED TO LOVE THIS VALLEY

16-1

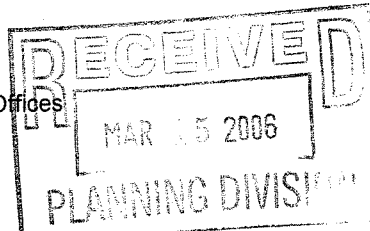
LETTER 16

Ken Randozzo
(no date)

16-1 The commenter expresses opposition to the project. No response is necessary, because no questions or new information regarding the environmental analysis were raised.

December 6, 2005

City of Santa Clara
City Council and Council Offices
1500 Warburton Avenue
Santa Clara, CA 95050



RECEIVED

DEC 09 2005

OFFICE OF THE MAYOR
CITY OF SANTA CLARA

Dear Santa Clara City Council:

The 17 acres of the University of California Agricultural Research Center (BAREC) is a unique one of a kind place. The research on this property has been vital to individual health and to such environmental issues as recycling, pollution reduction, drought, Santa Clara and San Mateo County historical weather records, and appropriate plants for our soil and climate. With its closing the 500 plus Santa Clara County Master Gardeners no longer have a home to educate the public about these important issues. For these and many more reasons I urge you to keep the BAREC property agriculturally zoned.

Since it was considered the State's leader in the rural/urban interface issues and since it has greatly contributed to our culture and history for over 140 years, I believe it is also important you recognize its historical importance to our community and to the State by supporting its City, State, and National Historical Registry status.

Because of its unique history and its location in the middle of our metropolitan area, the property has great potential to bring federal, state, and private foundation money to the City of Santa Clara. The permanent jobs this would create and the good it could bring would far outweigh a housing development which can go anywhere in the Valley and which would eventually become a drain on the City's economy. This land could become a stimulus for new kinds of jobs not yet seen in the Valley and help get us back on track to becoming a more diverse healthy economy. This is something we need as Santa Clara County currently has the highest unemployment rate in the Bay Area. "The average acre of farmland in San Francisco earns \$123,000 per year" quoted from the Agriculture Census.

I urge you to demonstrate your visionary leadership for future generations and vote to keep these 17 acres agriculturally zoned.

Gratefully,

William Dudley

A handwritten signature in cursive script that reads "William Dudley".



William Dudley
Hidden Villa

26870 Moody Road
Los Altos, CA 94022

17-1

LETTER 17

William Dudley
December 6, 2005

17-1

The commenter urges the City to keep the site agriculturally zoned and states that research on the Project Site has been vital to a variety of areas. The commenter states that the City should support the site for City, State, and National Historical Registry status. Please refer to Master Response 6 and 7 for a discussion of alternative farming options for the site. The DEIR contains an evaluation of the site's cultural resources in compliance with CEQA in Section 4.11, "Cultural Resources." As described therein and further elaborated in Master Response 5, the conclusion of the EIR, after extensive research and review of evidence in the record, is that neither the structures on the Project Site nor the landscape qualify as historical resources under Section 15064.5 of the State CEQA Guidelines or are eligible for listing on the California Register of Historical Resources (CRHR) or the National Register of Historic Places (NRHP). Further, staff of the Office of Historic Preservation (OHP) concurred with findings presented in the DEIR (see Appendix B of this document). The commenter offers no evidence that the analysis presented in the DEIR is inadequate; therefore, no further response can be provided.

The commenter also states that the Project Site could provide permanent jobs that would assist the City in becoming a more diverse, healthy economy. This is not a CEQA issue and does not address the analysis provided in the DEIR; therefore, no further response can be provided.

March 28, 2006

City of Santa Clara
City Council and Council Offices
1500 Warburton Avenue
Santa Clara, CA 95050

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MAR 31 2006

APR 04 2006

OFFICE OF THE MAYOR
CITY OF SANTA CLARA

City of Santa Clara
Planning Division

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Gratefully,

Leana Ollyffe

2403 Kenwood Ave
San Jose CA 95128

18-1

LETTER 18

Leanna Orliffe
March 28, 2006

18-1 This comment letter repeats the content of comment letter 17. Please refer to comment 17-1.

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March 29, 2006

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APR 04 2006

City of Santa Clara
City Council and Council Offices
1500 Warburton Avenue
Santa Clara, CA 95050

APR 03 2006
OFFICE OF THE MAYOR
CITY OF SANTA CLARA

City of Santa Clara
Planning Division

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I urge you to demonstrate your visionary leadership for future generations and vote to keep these 17 acres agriculturally zoned.

Gratefully,

Amagla D'Onofrio
535 Pineview Dr
San Jose, CA 95117

19-1

LETTER 19

Angela D'Orfani
March 29, 2006

19-1 This comment letter repeats the content of comment letter 17. Please refer to comment 17-1.

DATE \@ "MMMM d, yyyy" * MERGEFORMAT October 7, 2005

City of Santa Clara
City Council and Council Offices
1500 Warburton Avenue
Santa Clara, CA 95050

RECEIVED

APR 18 2006

OFFICE OF THE MAYOR
CITY OF SANTA CLARA

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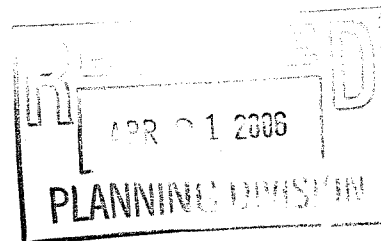
Since it was considered the State's leader in the rural/urban interface issues and since it has greatly contributed to our culture and history for over 140 years, I believe it is also important you recognize its historical importance to our community and to the State by supporting its City, State, and National Historical Registry status.

Because of its unique history and its location in the middle of our metropolitan area, the property has great potential to bring federal, state, and private foundation money to the City of Santa Clara. The permanent jobs this would create and the good it could bring would far outweigh a housing development which can go anywhere in the Valley and which would eventually become a drain on the City's economy. This land could become a stimulus for new kinds of jobs not yet seen in the Valley and help get us back on track to becoming a more diverse healthy economy. This is something we need as Santa Clara County currently has the highest unemployment rate in the Bay Area. "The average acre of farmland in San Francisco earns \$123,000 per year" quoted from the Agriculture Census.

I urge you to demonstrate your visionary leadership for future generations and vote to keep these 17 acres agriculturally zoned.

Gratefully,

Sandi Strouse
1661 Cleveland Av
San Jose, CA 95126



20-1

LETTER 20

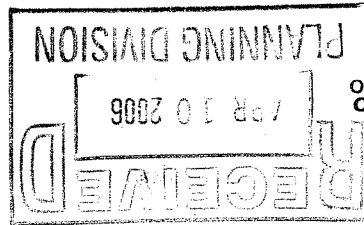
Sandi Strouse
April 1, 2006

20-1 This comment letter repeats the content of comment letter 17. Please refer to comment 17-1.

April 3, 2006

City of Santa Clara
City Council and Council Offices
1500 Warburton Avenue
Santa Clara, CA 95050

RECEIVED



APR 06 2006

OFFICE OF THE MAYOR
CITY OF SANTA CLARA

Dear Santa Clara City Council:

The 17 acres of the University of California Agricultural Research Center (BAREC) is a unique one of a kind place. The research on this property has been vital to individual health and to such environmental issues as recycling, pollution reduction, drought, Santa Clara and San Mateo County historical weather records, and appropriate plants for our soil and climate. With its closing the 500 plus Santa Clara County Master Gardeners no longer have a home to educate the public about these important issues. For these and many more reasons I urge you to keep the BAREC property agriculturally zoned.

Since it was considered the State's leader in the rural/urban interface issues and since it has greatly contributed to our culture and history for over 140 years, I believe it is also important you recognize its historical importance to our community and to the State by supporting its City, State, and National Historical Registry status.

Because of its unique history and its location in the middle of our metropolitan area, the property has great potential to bring federal, state, and private foundation money to the City of Santa Clara. The permanent jobs this would create and the good it could bring would far outweigh a housing development which can go anywhere in the Valley and which would eventually become a drain on the City's economy. This land could become a stimulus for new kinds of jobs not yet seen in the Valley and help get us back on track to becoming a more diverse healthy economy. This is something we need as Santa Clara County currently has the highest unemployment rate in the Bay Area. "The average acre of farmland in San Francisco earns \$123,000 per year" quoted from the Agriculture Census.

I urge you to demonstrate your visionary leadership for future generations and vote to keep these 17 acres agriculturally zoned.

Gratefully,

Ms. Jean L. Bosser



21-1

LETTER 21

Jean L. Bosser
April 3, 2006

21-1 This comment letter repeats the content of comment letter 17. Please refer to comments 17-1.

3-7-06

Mrs Sparaceno,

Dear friend -

I have so much
to share - First, I
hope the city of SC
do not change their
mind about Bavelle.
I don't care what
the city of San Jose
thinks about it -

except the seniors
housing to make them
^{two} story instead of
^{three} stories - after
all stairs and senior
citizens don't go to-
gether too well.

also according to the
speaker who talked

22-1

2
 and lesbians.
 The church has to
 have some rules
 to go by.
 Domestic partners
 not marriage part-
 ners, we have to
 give them equal be-
 nefits. They should
 have the rights to
 adopt - If they chose
 to adopt or men use
 a (sleazy carrier) to
 have a child by a
 woman and then toss
 her out of the home
 (this happened in the old
 Testament (Leviticus) That
 mother and child has
 to have the protection

22-1
 Cont'd

Something to share
about
with my family.

1st Lt
Remember Angela
my granddaughter
she is still here.
in Germany, she is
married to Salvador
and has a baby.

she met Salvador
in Mexico - who
was sent to Monaco
France on a scholar-
ship from Mexico to
study High Cuisine and
hotel management. At
the same time she
was shipped to Germa-
ny to be deploy to
Iraq in the near fu-
ture - They have

22-1
Cont'd

to us, at the Citizen Advisory Committee, those buildings will stick up & out like a sore thumb from across the street - Santana Row.

also we have to deal with Gay pride week (last week) Santa Clara should be the first city to give equal benefits to gays and lesbians like France did about 10 to 15 yrs ago. I feel it is the most civilized way to deal with this situation. not marriage - People has to have a separation between church and state. now as the state is accepting gays

22-1
Cont'd

...as baby girl Maya...
Angela is a 1st Lieutenant
now. She shows
great leadership quality.

My daughter is
paying for her
to have a nanny.

When you are an
officer in the American
Army - you have
the right to live off
base - have your own
apartment and make
enough money to pay
for the rest.

It is a good
life.

22-1
Cont'd

of the state. If she wants
to keep the child - she
should have child support
from that ^{see} man ^{and woman} - and have
the right to keep her
child and home to raise
the child or children to
be good citizens.

I think this is it.

Thank you for listening

Maria Bradlo

I enjoy the opera
at our new art + per-
formance-center - I
am looking forward
to other performances.
walking distance from
our house plus good
free parking

22-1
Cont'd

LETTER 22

Marie Bradlo
March 7, 2006

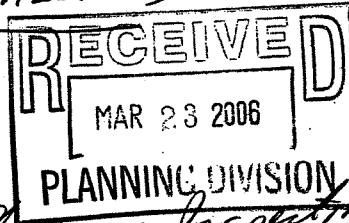
22-1 The commenter offers her opinion of the project and other social issues. The commenter states that any senior housing proposed at the site should be no higher than one to two stories. This is not a CEQA issue and does not address the analysis provided in the DEIR; therefore, no response can be provided.

March 21, 2006

Anthony J. Pizga (NOT "ANTHONY PIAZZI")

105 Harold Ave.

San Jose, Ca. 95117



Kevin Riley, A.C. Director of Planning & Inspection

Dear Mr. Riley,

Thank you for the notice of DEIR for "Santa Clara Gardens" Development, 90 North Winchester, Santa Clara.

Please know that my mother & I and our family support the proposed development. However, we strongly feel that the number of senior housing units should be doubled as trade-off for at least 5 acres retained as open space. The developer could also increase the density of attached single family units to allow for more open space. One single acre per DEIR is an outrage! The surrounding neighbors will make their voices heard and oppose your plan much louder than I! Furthermore, the existing residential area from Henry at Dorisich to Brookside Ave, south of Forest Ave - your streets are a mess & there is yet to be a Santa Clara mailing address despite annexation back in the 1980's! In addition, since Santa Clara is the "Mission City" - there are almost no fine examples of new construction to reflect mission-style architecture. The "Santa Clara Gardens" ought to be of a mission style and not yet another city of Santa Clara generic new development.

Sincerely, Anthony J. Pizga
ANTHONY J. PIAZZA

23-1

23-2

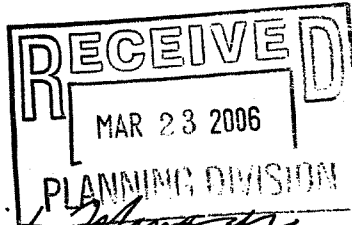
23-3

LETTER 23

Anthony Piazza
March 21, 2006

- 23-1** The commenter expresses support for the project and suggests that the number of senior housing units be doubled and 5 acres of the site retained as open space. The Reduced Development Alternative analyzed in the DEIR would limit development to the easterly 8.5 acres of the site and the westerly 8.5 acres would remain as undeveloped open space. Thus, the DEIR analyzes an alternative that is similar to the commenter's proposal. (See DEIR, Section 7.5, "Reduced Development Alternative")
- 23-2** The commenter expresses concern about traffic along Henry Avenue and Dorcich and states that there has yet to be an actual Santa Clara mailing address for some residential areas surrounding the site despite annexation from San Jose in the 1980s. The project's traffic impacts were evaluated consistent with the requirements of CEQA in Section 4.10, "Transportation and Circulation," of the DEIR and Recirculated DEIR. The project's traffic impacts along Henry Avenue and Dorcich Street were specifically evaluated in the analysis (see Impact 4.10-9). As described therein, the project would not result in the substantial generation of traffic along these roadways that would exceed approved significance thresholds. As such, impacts along these roadways would be less than significant.
- 23-3** The commenter suggests that the development be designed in the "mission" style. This is not a CEQA issue and does not address the analysis provided in the DEIR; therefore, no response can be provided.

March 21, 2006
Anthony J. Pizga
105 Harold Ave.
San Jose, Ca. 95117



Aloia Sciora, AICP, Project Manager

Dear Ms. Sciora,

In reference to DEIR at 90 N. Winchester,
City of Santa Clara - "Santa Clara Gardens", one
acre of gardens as open space is an outrage!
If the city of Santa Clara could acquire six
acres for senior housing, then why not
at least 5 acres for open space for
truly reflect the project's name?!

24-1

In addition, the DEIR fails to identify
the great impact on surrounding existing
residential neighborhood and its already
blighted street pavement conditions - from
N. Henry to Brookside Ave, south of Forest
Ave, annexed to the city of Santa Clara in the
1980's with great promises of improvements
yet to be realized! The excuse that our
existing neighborhood is not in City "assessment
district" is nonsense. The streets are an utter
disgrace & now we're about to have the impacts
of the Santa Clara gardens - all one acre of 17!
If the State is paid too much to present the city's
a flawed project! Sincerely, Anthony
J. Pizga

24-2

LETTER 24

Anthony Piazza

March 21, 2006

- 24-1** The commenter states that at least five acres of the site should be maintained as open space. The Reduced Development Alternative analyzed in the DEIR would limit development to the easterly 8.5 acres of the site and the westerly 8.5 acres would remain as undeveloped open space. Thus, the DEIR analyzes an alternative that is similar to the commenter's proposal. (See DEIR, Section 7.5, "Reduced Development Alternative")
- 24-2** The commenter states that the DEIR does not address the traffic conditions for the surrounding neighborhood. A comprehensive evaluation of the project's traffic impacts consistent with the requirements of CEQA, was provided in the Section 4.10, "Transportation and Circulation," of the DEIR and Recirculated DEIR. Additional discussion of neighborhood traffic impacts is provided in Master Response 3, Section 3.3.3, "Traffic Impacts in San Jose."